MSDS

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Procter & Gamble
Fabric and Home Care Division
Sharon Woods Technical Center
11530 Reed Hartman Highway
Cincinnati, OH 45241-2422

MATERIAL SAFETY DATA SHEET

MSDS #: H94000M
Supersedes: N/A

Issue Date: 11/1/99
Last Issue Date: N/A

SECTION I - CHEMICAL PRODUCT

Identity: **Disinfectant Powder Cleanser**

Use: **Powdered All-Purpose Cleanser**

Brands: **COMET (Regular and Lemon Fresh fragrances)**

Hazard Rating: 1

Health: 1
Flammability: 0
Reactivity: 0

4=EXTREME
3=HIGH
2= MODERATE
1=SLIGHT

Emergency Telephone Number: 24hr P&G Operator - 1-800-926-9441 or call Local Poison Control Center

SECTION II - COMPOSITION AND INGREDIENTS

Ingredients/Chemical Name: Bleach, cleaning agents (calcium carbonate, sodium carbonate, anionic surfactants), quality control agents, perfume, color. Comet Cleanser contains no phosphorus.

Hazardous Ingredients as defined by OSHA, 29 CFR 1910.1200.

Chemical Name	Common Name	CAS No.	Recommended Limits	Composition Range	LD50/LC50
Calcium carbonate	Limestone	1317-65-3	ACGIH TWA: 10mg/m^3 (total dust) / 5 mg/m^3 (respirable dust) OSHA PEL: 15 mg/m^3	60-100%	NA/NA
Silica, quartz	Quartz (naturally occuring component of limestone)	14808-60-7	ACGIH TWA: 0.1mg/m^3 (respirable dust) OSHA TWA: 0.1 mg/m^3	0.1-1%	9 g/kg/NA

SECTION III - HAZARDS IDENTIFICATION

Health Hazards (Acute and Chronic):

Ingestion: Mild mucous membrane irritant.

Eye Contact: Mild eye irritant.

Inhalation: Mild respiratory irritant.

Skin: Mild skin irritant.

Signs and Symptoms of Exposure:

Ingestion: Oral ingestion may result in gastrointestinal irritation with nausea, vomiting and diarrhea.

Eye Contact: Prolonged skin contact or direct contact with eye may result in superficial, temporary irritation similar to those produced by other household detergents.

Skin: Prolonged skin contact or direct contact with eye may result in superficial, temporary irritation similar to those produced by other household detergents.

Inhalation: No hazards under normal conditions of product use or within the occupational exposure guidelines. Unusually high exposures may cause coughing or irritation of nose and throat.

SECTION IV - FIRST AID INFORMATION

Emergency and First Aid Procedures:

Ingestion: Dilute with fluids and treat symptomatically.

Eye Contact: For accidental eye contact, flush thoroughly with water for 15 minutes.

Skin: Wash with soap and water and discontinue use.

Inhalation: For accidental, high level inhalation, remove to fresh air. Get medical attention if coughing persists.

Other: Consumer product package has a caufion statement: CAUTION: KEEP OUT OF REACH OF CHILDREN. May cause eye irritation. In case of eye contact, flush thoroughly with water. If irritation persists, see a physician. If swallowed, drink a glass of water to dilute. Do not mix with other products especially toilet bowl cleansers and products that contain ammonia.

SECTION V - FIRE FIGHTING INFORMATION

Flash Point (Method Used): N/A **Explosive Limits:** *LEL*: **N/A** *UEL*: **N/A**

Extinguishing Media: Use CO_2, water, or dry chemical.

Special Fire Fighting Procedures: None required.

Unusual Fire Hazards: None known.

Stability *Unstable*: *Conditions to Avoid*: None known

Stable: X

Incompatibility (Materials to Avoid): Ammonia and acids.

Hazardous Decomposition/By Products: Chlorine gas.

Hazardous Polymerization: *May Occur*: *Conditions to Avoid*: None known

Wiil Not Occur: X

SECTION VI - ACCIDENTAL RELEASE MEASURES

Personal Precautions: None

Environmental Precautions: DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS. Product contains biodegradable surfactant. If permitted, flush small quantities down sewer drain with large excess of water or dispose of at landfill.

Steps To Be Taken in Case Material is Released or Spilled: Vacuum to remove spill and place in trash container for disposal or flush with water. Do not dry sweep.

SECTION VII - HANDLING AND STORAGE

Precautions To Be Taken in Handling and Storing: Avoid moisture when storing to prevent loss of bleaching action and to prevent caking.

Other Precautions: None required.

SECTION VIII - EXPOSURE CONTROLS, PERSONAL PROTECTION

Respiratory Protection (Specify Type): None required with normal use. For bulk handling or other dusty conditions, use respiratory protection approved by NIOSH for dust.

Ventilation *Local Exhaust*: None required with normal consumer use. *Special*: None

Mechanical (General): Acceptable. *Other*: None

Eye Protection: None required with normal consumer use.

Industrial Setting: For splash protection, use chemical goggles.

Protective Gloves: None required with normal use.

Other Protective Equipment: None required with normal use.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point °F: N/A	**Specific Gravity (H_2O=1):** ca. 1
Vapor Pressure (mm Hg): N/A	**Percent Volatile by Volume (%):** ca. 1
Vapor Density (Air=1): N/A	**Evaporation Rate (nBuOAc=1):** N/A
Odor Threshold: N/A	**Freezing Point:** N/A
Coefficient of Water/Oil Distribution: N/A	**pH (1% solution):** N/A
Scooped Density: N/A	**Solubility in Water:** Moderately
Appearance and Odor: Green powder, cedar pine or lemon scent.	**Reserve Alkalinity:** N/A

SECTION X - STABILITY AND REACTIVITY

Possible Hazardous Reactions/Conditions: None known

Explosion Data – Sensitivity to Mechanical Impact: None

Explosion Data – Sensitivity to Static Discharge: None

Conditions to Avoid: None

Materials to Avoid: None

Hazardous Decomposition Products: None known

Other Recommendations: None

SECTION XI - TOXIGOLOGICAL INFORMATION

Calcium carbonate, an ingredient of this product, contains small amounts of crystalline silica (quartz) as a naturally occurring impurity. Prolonged, excessively high exposures to respirable crystalline silica may result in reduced lung function in some individuals. IARC has found sufficient evidence to classify crystalline silica as a carcinogen in animals, but there is limited evidence in humans.
LD50 (rats oral): 9 g/kg
ED50: 0.23 g/kg

PRODUCT as a whole:
CARCINOGENICITY: None Known

SENSITIZATION EFFECTS: None Known

REPRODUCTIVE EFFECTS: None Known

SYNERGISTIC EFFECTS: None Known

SEGTION XH - ECOLOGICAL INFORMATION

No concerns at relevant environmental concentrations.

SECTION XIII - DISPOSAL CONSIDERATIONS

Waste Disposal Method: Product contains biodegradable surfactant. If permitted, flush small quantities down sewer drain with large excess of water or dispose of at landfill. DISPOSAL IS TO BE PERFORMED IN COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION XIV - TRANSPORT INFORMATION

DOT Classification: Comet cleanser is not DOT hazardous, and is not regulated under the DOT Hazardous Material Regulations (49 CFR, parts 171-180) which govern the sale and transport of hazardous materials.

SECTION XV - ADDITIONAL REGULATORY INFORMATION

All components are listed on the US TSCA Inventory. No components are affected by Significant New Use Rules (SNURs) under TSCA §5.

No components of Comet are subject to California Proposition 65.

All ingredients are CEPA approved for import to Canada by Procter & Gamble. This product has been classified with Hazard Criteria of the Canadian Control Products Regulation (CPR) and this MSDS contains all information required by the Canadian Products Regulation.

SECTION XVI - OTHER INFORMATION

*N/A. - Not Applicable *N/K. - Not Known

The submission of this MSDS may be required by law, but this is not an assertion that the substance is hazardous when used in accordance with proper safety practices and normal handling procedures. Data supplied is for use only in connection with occupational safety and health.

The information contained herein has been compiled from sources considered by Procter & Gamble to be dependable and is accurate to the best of the Company's knowledge. The information relates to the specific material designated herein, and does not relate to the use in combination with any other material or any other process. Procter & Gamble assumed no responsibility for injury to the recipient or third persons, for any damage to any property resulting from misuse of the controlled product.

Material Safety Data Sheet: Simple Green® All-Purpose Cleaner
Simple Green® Scrubbing Pad

Version No. 10013c Date of Issue: July 2007 *ANSI-Z400.1-2003 Format*

Section 1: PRODUCT & COMPANY IDENTIFICATION

Product Name: Simple Green® All-Purpose Cleaner
Simple Green® Scrubbing Pad
Additional Name: Simple Green® Concentrated Cleaner/Degreaser/Deodorizer

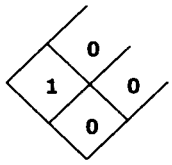
Manufacturer's Product Code Numbers: *Please refer to page 4*

Company: Sunshine Makers, Inc.
15922 Pacific Coast Highway
Huntington Harbour, CA 92649 USA
Telephone: 800-228-0709 • 562-795-6000 Fax: 562-592-3830
Emergency Phone: Chem-Tel 24-Hour Emergency Service: 800-225-3924

Use of Product: An all purpose cleaner and degreaser used diluted in water for direct, spray and dip tank procedures. Scrubbing pad is used with water for manual scrubbing applications.

Section 2: HAZARDS IDENTIFICATION

Emergency Overview: CAUTION. Mild eye irritant.
Simple Green® is a dark green liquid with a sassafras odor. Scrubbing Pad is a green fibrous rectangle.



HMIS Rating:
Health = 1 = slight
Fire = 0
Reactivity, and Special = 0 = minimal

Eye Contact: Mild Eye Irritant.

Skin Contact: No adverse effects expected under typical use conditions. Prolonged exposure may cause dryness. Under this condition, use of gloves or skin moisturizer after washing may be indicated.

Ingestion: May cause stomach or intestinal upset if swallowed (due to detersive properties.)

Inhalation: No adverse effects expected under typical use conditions. Adequate ventilation should be present when using Simple Green® over a prolonged period of time. Open windows or ventilate via fan or other air-moving equipment if necessary.

Carcinogens: No ingredients are listed by OSHA, IARC, or NTP as known or suspected carcinogens.

Medical Conditions: No medical conditions are known to be aggravated by exposure to Simple Green®. Dermal-sensitive users may experience mild but reversible reactions.

UN Number: Not Required Dangerous Goods Class: Nonhazardous

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

The only ingredient of Simple Green® with established exposure limits is undiluted 2-butoxyethanol (<6%) (Butyl Cellosolve; CAS No. 111-76-2): the ACGIH TLV-TWA is 20 ppm (97 mg/m^3). Based upon chemical analysis, Simple Green® contains no known EPA priority pollutants, heavy metals or chemicals listed under RCRA, CERCLA, or CWA. Analysis by TCLP (Toxicity Characteristic Leaching Procedure) according to RCRA revealed no toxic organic or inorganic constituents.

All components of Simple Green® are listed on the TSCA Chemical Substance Inventory.

NJ Trade Secret Numbers				
80100235-5000p	80100235-5002p	80100235-5004p	80100235-5006p	80100235-5008p
80100235-5001p	80100235-5003p	80100235-5005p	80100235-5007p	80100235-5009p

Section 4: FIRST AID MEASURES

Eye Contact: Reddening may develop. Immediately rinse the eye with large quantities of cool water; continue 10-15 minutes or until the material has been removed; be sure to remove contact lenses, if present, and to lift upper and lower lids during rinsing. Get medical attention if irritation persists.

Skin Contact: Minimal effects, if any; rinse skin with water, rinse shoes and launder clothing before reuse. Reversible reddening may occur in some dermal-sensitive users; thoroughly rinse area and get medical attention if reaction persists.

Swallowing; Essentially non-toxic. Give several glasses of water to dilute; do not induce vomiting. If stomach upset occurs, consult physician.

Inhalation: Non-toxic. Exposure to concentrate may cause mild irritation of nasal passages or throat; remove to fresh air. Get medical attention if irritation persists.

Section 5: FIRE FIGHTING MEASURES

Simple Green® is stable, not flammable, and will not burn. No special procedures required.

Flash Point/Auto-Ignition: Not flammable.
Flammability Limits: Not flammable.
Extinguishing Media: Not flammable/nonexplosive.
Special Fire Fighting Procedures: None required.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with eyes. Do not rub eyes with hands during cleanup. No special precautions for dermal contact are needed. Wash hands thoroughly after cleaning up spill or leak.

Method for cleaning up: Recover usable material by convenient method, residual may be removed by wipe or wet mop. If necessary, unrecoverable material may be washed to drain with large quantities of water.

Section 7: HANDLING AND STORAGE

No Special precautions are required. This product is non-hazardous for storage and transport according to the U.S. Department of Transportation Regulations. Simple Green® requires no special labeling or placarding to meet U.S. Department of Transportation requirements.

UN Number: Not Required
Dangerous Goods Class: Nonhazardous

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: The Simple Green® formulation presents no health hazards to the user when used according to label directions for its intended purposes. Mild skin and eye irritation is possible (please see Eye contact and Skin contact in section IV.) No special precautionary measures required under normal use conditions.

Ventilation: No special ventilation, precautions or respiratory protection is required during normal use. Large-scale use indoors should provide an increased rate of air exchange.

Human Health Effects or Risks From Exposure: Adverse effects on human health are not expected from Simple Green®, based on 20 years of use of Simple Green® without reported adverse health incidence in diverse population groups, including extensive use by inmates of U.S. Federal prisons in cleaning operations.

Eye protection: Simple Green® is a mild eye irritant; mucous membranes may become irritated by concentrate. Eye protection not generally required. Wash hands after using wipes.

Skin protection: Simple Green® is not likely to irritate the skin in the majority of users. Repeated daily application to the skin without rinsing, or continuous contact on the skin may lead to temporary, but reversible, irritation. Rinse completely from skin after contact.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION – continued –

General hygiene conditions: There are no known hazards associated with this material when used as recommended. The following general hygiene considerations are recognized as common good industrial hygiene practices:

- Avoid breathing vapor or mist.
- Avoid contact with eyes.
- Wash thoroughly after handling and before eating, drinking, or smoking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance & Odor: Cleaner is a dark green liquid, pad is a fibrous green matrix; both exhibit a sassafras odor.			
Specific Gravity:	1.020	**Vapor Pressure:**	18 mm Hg @ 20°C; 23.5 mmHg @ 26°C
Evaporation:	>1 (butyl acetate = 1)	**Vapor Density:**	1.3 (air = 1)
Water Solubility:	100%	**Density:**	8.5 lbs/gallon
Boiling Point:	100.6°C (212°F)	**pH:**	9.35; Safety Towel pH is 8.1 - 8.8
Ash Content:	At 600°F: 1.86% by weight	**Nutrient Content:** Phosphorus: 0.3% by formula Nitrogen <1.0% by weight (fusion and qualitative test for ammonia) Sulfur: 0.6% by weight (barium chloride precipitation method)	
Freezing Point: Approx -9 °C (16 °F) *If product freezes, it will reconstitute without loss of efficacy when brought back to room temperature and agitated.*			
VOC Composite Partial Pressure: 0.006 mmHg @ 20°C			
Volatile Organic Compounds (VOCs): Per EPA Method 24, VOC's are 5.9%. Cleaner must be diluted at least 1 part Simple Green to 2 parts water to meet CARB, and 1 part Simple Green to 3 parts water to meet SCAQMD Rule 1171 & Rule 1122 and BAAQMD Regulation 8-16 VOC requirements for solvent cleaning operations. Towel VOCs are 1.2%.			

Section 10: STABILITY AND REACTIVITY

Stability: Stable
Materials to Avoid: None known
Hazardous Decomposition Products: None expected

Section 11: TOXICOLOGICAL INFORMATION

Nonhuman Toxicity (Data for Simple Green®)
Acute Toxicity: Oral LD_{50} (rat): >5.0 g/kg body weight Dermal LD_{50} (rabbit) >2.0 g/kg body weight

Eye Irritation: With or without rinsing with water, the irritation scores in rabbits at 24 hours did not exceed 15 (mild irritant) on a scale of 0-110.

Dermal Irritation: Only mild, but reversible, irritation was found in a standard 72 hour test on rabbits. A value of 0.2 (non-irritating) was found on a scale of 0-8.

Subchronic Dermal effects: No adverse effects, except reversible dermal irritation, were found in rabbits exposed to Simple Green (up to 2.0 g/kg/day for 13 weeks) applied to the skin of 25 males and 25 females. Only female body weight gain was affected.

Fertility Assessment by Continuous Breeding: The Simple Green® formulation had no adverse effect on fertility and reproduction in Cd-1 mice with continuous administration for 18 weeks, and had no adverse effect on the reproductive performance of their offspring.

Section 12: ECOLOGICAL INFORMATION

Biodegradability: Simple Green® is readily decomposed by naturally occurring microorganisms. The biological oxygen demand (**B**OD), as a percentage of the chemical oxygen demand (COD), after 4, 7, and 11 days was 56%, 60% and 70%, respectively. Per OECD Closed **B**ottle Test, Simple Green® meets OECD and EPA recommendations for ready biodegradability.

In a standard biodegradation test with soils from three different countries, **B**utyl Cellosolve reached 50% degradation in 6 to 23 days, depending upon soil type, and exceeded the rate of degradation for glucose which was used as a control for comparison.

Environmental Toxicity **I**nformation: Simple Green® is considered practically non-toxic per EPA's Aquatic toxicity scale.

Section 13: DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable local, state and federal laws. Dispose of used or unused product, and empty containers in accordance with the local, State, Provincial, and Federal regulations for your location. Never dispose of used degreasing rinsates into lakes, streams, and open bodies of water or storm drains.

Section 14: TRANSPORT INFORMATION

This product is non-hazardous for transport according to the U.S. Department of Transportation Services
UN Number: Not required Dangerous Goods Class: Nonhazardous

Section 15: REGULATORY INFORMATION

All components are listed on:	EINECS and TSCA Inventory		
*Reportable components:	None.	No components listed under:	Clean Air Act Section 112
RCRA Status:	Not a hazardous waste.	CERCLA Status:	No components listed
TSCA TRI Reporting:	Not required / Not listed	CA PROP. 65 Status:	No components listed

Section 16: OTHER INFORMATION

Questions about the information found on this MSDS should be directed to:
SUNSHINE MAKERS, INC. – TECHNICAL DEPARTMENT
15922 Pacitic Coast Hwy. Huntington Harbour, CA 92649

Phone: 800/228-0709 [8am-5pm Pacific time, Mon-Fri] *Fax:* 562/592-3830 *Email:* infoweb@simplegreen.com

National Stock Numbers & Industrial Numbers:

Simple Green

Part Number	NSN	Size
13012	7930-01-342-5315	24 oz spray (12/case)
13005	7930-01-306-8369	1 Gallon (6/case)
13006	7930-01-342-5316	5 Gallon
13016	7930-01-342-5317	15 Gallon
13008	7930-01-342-4145	55 Gallon

Retail Numbers:

Part Number	Size
13002	16 oz Trigger (12/case)
13005	1 Gallon (6/case)
13013	24 oz Trigger (12/case)
13014	67 oz / 2 L (6/case)
13033	32 oz Trigger (12/case)

Scrubbing Pad

Part Number	NSN	Size
10224	7930-01-346-9148	Each (24/case)

** part number is for both industrial and retail*

DISCLAIMER: The information provided with this MSDS is furnished in good faith and without warranty of any kind. Personnel handling this material must make independent determinations of the suitability and completeness of information from all sources to assure proper use and disposal of this material and the safety and health of employees and customers. Sunshine Makers, Inc. assumes no additional liability or responsibility resulting from the use of, or reliance on this information.

MATERIAL SAFETY DATA SHEET

JohnsonDiversey

Windex Powerized Glass Cleaner (RTU)

HMIS		NFPA	Personal protective equipment
Health	0	0	None Required
Fire Hazard	1	1	
Reactivity	0	0	

Version Number: 3 *Preparation date: 2005-05-20*

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Windex Powerized Glass Cleaner (RTU)

MSDS #: 126011004
Product code: 90122, 90135, 90139, 90940, CB006722, CB807701, 3694044, 3694052
Recommended use: Cleaning product.

Manufacturer, importer, supplier:
Consumer Branded Professional Products, Div.
JohnsonDiversey, Inc.
8310 16th Street
Sturtevant, Wisconsin 53177-0902
Phone: (888) 352-2249

Emergency telephone number: 1-800-851-7145 (Prosar); 1-651-917-6133 (Int'l Prosar); 01-800-710-3400 (México)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
The product contains no substances which at their given concentration, are considered to be hazardous to health

Principle routes of exposure: Eyes. Skin. Inhalation. Ingestion.
Eye contact: None known.
Skin contact: None known.
Inhalation: None known.
Ingestion: None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS

Ingredient(s)	CAS #	Weight %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Isopropyl alcohol	67-63-0	1 - 5%	5000 mg/kg (rat)	12800 mg/kg (rabbit)	16000 ppm/8H (rat)

4. FIRST AID MEASURES

Eye contact: Rinse with plenty of water.
Skin contact: Rinse with plenty of water.
Inhalation: No specific first aid measures are required.
Ingestion: No specific first aid measures are required.
Aggravated Medical Conditions: None known.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, water spray, foam, carbon dioxide.
Specific hazards: Although this product has a flash point below 200 Deg. F, it is an aqueous solution containing an alcohol and does not sustain combustion.
Unusual hazards: None known
Specific methods: No special methods required

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Extinguishing media which must not be used for safety reasons: None.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment

Environmental precautions and clean-up methods: Absorb spill with inert material (e.g. dry sand or earth), then place in a chemical waste container.

7. HANDLING AND STORAGE

Handling:
Avoid contact with eyes. COMBUSTIBLE LIQUID AND VAPOR . Keep away from open flames, hot surfaces and sources of ignition. Handle in accordance with good industrial hygiene and safety practice. FOR COMMERCIAL AND INDUSTRIAL USE ONLY.
Storage:
Keep tightly closed in a dry, cool and well-ventilated place. Protect from freezing. Keep out of the reach of children.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures to reduce exposure:
No special ventilation requirements. General room ventilation is adequate.

Personal Protective Equipment

Eye protection:	No special requirements under normal use conditions
Hand protection:	No special requirements under nonnal use conditions
Skin and body protection:	No special requirements under normal use conditions
Respiratory protection:	No special requirements under normal use conditions
Hygiene measures:	Handle in accordance with good industrial hygiene and safety practice

Ingredient(s)	CAS #	ACGIH	OSHA	Mexico
Isopropyl alcohol	67-63-0	400 ppm (STEL) 200 ppm (TWA)	980 mg/m^3 400 ppm	1225 mg/m^3 (STEL) 980 mg/m^3 (TWA)

9. RHYSICAL AND CREMICAL PROPERTIES

Physical State:	Liquid	**Bulk density:**	No infonnation available
pH:	11.45	**Dilution pH:**	No infonnation available.
Appearance:	Liquid	**Vapor density:**	No infonnation available
Color:	Blue	**Evaporation rate:**	No information available
Odor:	Ammoniacal	**Boiling point/range:**	Not determined
Specific gravity:	0.996	**Melting point/range:**	Not determined
Density:	0.996	**Decomposition temperature:**	Not detennined
VOC:	3.8	**Autoignltion temperature:**	No infonnation available
Flash point:	131 (°F) 55 (°C)	**Viscosity:**	No information available
Solubility:	Soluble	**Partition coefficient (n-octanol/water):**	No information available
		Solubility in other solvents:	No infonnation available

10. STABILITY AND REACTIVITY

Stability:	The product is stable
Polymerization:	Hazardous polymerization does not occur.
Hazardous decomposition products:	None reasonably foreseeable.
Conditions to avoid:	Do not freeze.

11. TOXICOLOGICAL INFORMATION

Acute toxicity
Component Infonnation: Oral LD50 estimated to be greater than 5000 mg/kg. Dermal LD50 estimated to be > 2000 mg/kg.
See Section 3

Chronic toxicity: None known

Specific effects

Carcinogenic effects:	None known
Mutagenic effects:	None known
Reproductive toxicity:	None known
Target organ effects:	None known

12. ECOLOGICAL INFORMATION

Environmental Information: When used for its intended purpose this product should not cause adverse effects in the environment

13. DISROSAL GONSIDERATIONS

Waste from residues / unused products:
Dispose of according to all federal, state and local applicable regulations

14. TRANSRORT INFORMATION

DOT/TDG: Please refer to the Bill of Lading/receiving documents for up to date shipping information

15. REGULATORY INFORMATION

International Inventories
All components of this product are listed on the following inventories: **U.S.A. (TSCA)**.

U.S. Regulations
California Proposition 65: This product is not subject to the reporting requirements under California's Proposition 65

STATE RIGHT TO KNOW

Ingredient(s)	CAS #	MARTK:	NJRTK:	PARTK:	RIRTK:	ILRTK:	CTRTK:
Hexyloxyethanol	112-25-4	-	Listed	Listed	-	-	-
Ammonium hydroxide	1336-21-6	Listed	Listed	Listed	-	Listed	Listed
Water	7732-18-5	-	-	-	-	-	-
Isopropyl alcohol	67-63-0	Listed	Listed	Listed	Listed	Listed	Listed

CERCLA / SARA

Ingredient(s)	CAS #	Weight %	CERCLA/SARA RQ (lbs)	Section 302 TPQ (lbs)	Section 313
Hexyloxyethanol	112-25-4	0.1 - 1.5%			Listed.
Ammonium hydroxide	1336-21-6	0.1 - 1.5%	1000		Listed.
Isopropyl alcohol	67-63-0	1 - 5%	100		Listed.

SARA 311/312 Hazard Categories

Immediate:	N
Delayed:	N
Fire:	Y
Reactivity:	N
Sudden Release of Pressure:	N

Canada
WHMIS hazard class: Not for sale in Canada.

Ingredient(s)	CAS #	NPRI
Isopropyl alcohol	67-63-0	Listed

16. OTHER INFORMATION

Reason for revision:	Not applicable
Prepared by:	NAPRAC
Additional advice:	None

Notice to Reader: This document has been prepared using data from sources considered technically reliable. It does not constitute a warranty, express or implied, as to the accuracy of the information contained within. Actual conditions of use and handling are beyond seller's control. User is responsible to evaluate all available information when using product for any particular use and to comply with all Federal, State, Provincial and Local laws and regulations.

THE CLOROX -- FORMULA 409 ALL PURPOSE CLEANER
MATERIAL SAFETY DATA SHEET
NSN: 793000F030398
Manufacturer's CAGE: 93098
Part No. Indicator: A
Part Number/Trade Name: FORMULA 409 ALL PURPOSE CLEANER

General Information

Company's Name: THE CLOROX CO
Company's Street: 7200 JOHNSON DR
Company's City: PLEASANTON
Company's State: CA
Company's Country: US
Company's Zip Code: 94588
Company's Emerg Ph #: 415-847-6100
Company's Info Ph #: 415-847-6100
Record No. For Safety Entry: 001
Tot Safety Entries This Stk#: 001
Status: SE
Date MSDS Prepared: 01JUL93
Safety Data Review Date: 19OCT93
Preparer's Company: THE CLOROX CO
Preparer's St Or P. O. Box: 7200 JOHNSON DR
Preparer's City: PLEASANTON
Preparer's State: CA
Preparer's Zip Code: 94566
MSDS Serial Number: BSKZT
Hazard Characteristic Code: NI

Ingredients/Identity Information

Proprietary: NO
Ingredient: 2-BUTOXYETHANOL (ETHYLENEGLYCOL MONOBUTYL ETHER), BUTYL CELLOSOLVE, BUTYL GLYCOL, GLYCOL ETHER EB
Ingredient Sequence Number: 01
Percent: 0.5-5
NIOSH (RTECS) Number: KJ8575000
CAS Number: 111-76-2
OSHA PEL: 50 PPM (SKIN)
ACGIH TLV: 25 PPM (SKIN)
Other Recommended Limit: 25 PPM (SKIN)

Proprietary: NO
Ingredient: ETHYLENE OXIDE (SUSPECTED 2A HUMAN CARCINOGEN BY IARC; CONFIRMED ANIMAL CARINOGEN BY IARC & NTP)
Ingredient Sequence Number: 02

Percent: TRACE
NIOSH (RTECS) Number: KX2450000
CAS Number: 75-21-8
ACGIH TLV: 1.8 MG/CUM (A2)

Proprietary: NO
Ingredient: GLYCOL ETHERS, DIETHYLENE GLYCOL, 2,2-OXYBISETHANOL
Ingredient Sequence Number: 03
Percent: <10
NIOSH (RTECS) Number: ID5950000
CAS Number: 111-46-6

Proprietary: NO
Ingredient: MAGNESIUM SODIUM ETHYLENEDIAMINETETRAACETATE *92-2*
Ingredient Sequence Number: 04
Percent: <1
NIOSH (RTECS) Number: 1007734MS
CAS Number: 14402-88-1

Proprietary: NO
Ingredient: SODIUM HYDROXIDE, CAUSTIC SODA, LYE
Ingredient Sequence Number: 05
Percent: <0.5
NIOSH (RTECS) Number: WB4900000
CAS Number: 1310-73-2
OSHA PEL: 2 MG/CUM
ACGIH TLV: 2 MG/CUM CEILING
Other Recommended Limit: 2MG/M3 CEILING NIOSH

Physical/Chemical Characteristics

Appearance And Odor: GREEN LIQUID
Specific Gravity: 1.015
Solubility In Water: COMPLETE
pH: 12.4

Fire and Explosion Hazard Data

Flash Point: NONFLAMMABLE
Extinguishing Media: DETERMINED BY SURROUNDING FIRE.

Reactivity Data

Stability: YES
Hazardous Poly Occur: NO

Health Hazard Data

Route Of Entry - Inhalation: NO
Route Of Entry - Skin: YES
Route Of Entry - Ingestion: NO
Health Haz Acute And Chronic: EYES: IRRITATION. SKIN: ABSORBED. EXPOSURE TO ETHYLENE GLYCOL MONOBUTYL ETHER WILL CAUSE BLOOD & BONE MARROW DAMAGE.
Carcinogenicity - NTP: YES
Carcinogenicity - IARC: YES
Carcinogenicity - OSHA: NO
Explanation Carcinogenicity: SEE INGREDIENTS
Emergency/First Aid Proc: EYES: FLUSH W/PLENTY OF WATER. SKIN: WASH W/ WATER. INHALATION: REMOVE TO FRESH AIR. OBTAIN MEDICAL ATTENTION IN ALL CASES.

Precautions for Safe Handling and Use

Steps If Matl Released/Spill: ABSORB & CONTAINERIZE. WASH RESIDUE DOWN TO SANITARY SEWER. CONTACT THE SANITARY TREATMENT FACILITY IN ADVANCE TO ASSURE ABILITY TO PROCESS WASHED-DOWN MATERIAL.
Waste Disposal Method: DISPOSE OF IN ACCORDANCE W/LOCAL, STATE & FEDERAL REGULATIONS.
Precautions-Handling/Storing: MINIMIZE SKIN CONTACT & INHALATION OF VAPOR & MIST.
Other Precautions: NOT RECOMMENDED FOR USE ON SOFT VINYL, VARNISHED OR ALUMINUM. IF SPRAYED ON THESE SURFACES, RINSE & WIPE DRY IMMEDIATELY.

Control Measures

Ventilation: GENERAL
Protective Gloves: REQUIRED
Eye Protection: SAFETY GLASSES

Transportation Data

Disposal Data

Label Data

Label Required: YES
Technical Review Date: 19OCT93
Label Date: 19OCT93
Label Status: F
Common Name: FORMULA 409 ALL PURPOSE CLEANER
Chronic Hazard: NO
Signal Word: CAUTION!
Acute Health Hazard-Slight: X
Contact Hazard-Slight: X
Fire Hazard-None: X
Reactivity Hazard-None: X
Special Hazard Precautions: EYES: IRRITATION. SKIN: ABSORBED. EXPOSURE TO ETHYLENE GLYCOL MONOBUTYL ETHER WILL CAUSE BLOOD & BONE MARROW DAMAGE.
TARGET ORGANS: SKIN & EYES. CARCINOGEN: ETHYLENE OXIDE. EYES: CORROSIVE, SEVERE IRRITATION. MAY CAUSE CHEMICAL BURNS W/PERMANENT CORNEAL INJURY &
SENSITIZATION.SKIN: SEVERE IRRITATION, CORROSIVE, CHEMICAL B
Protect Eye: Y
Protect Skin: Y
Label Name: THE CLOROX CO
Label Street: 7200 JOHNSON DR
Label City: PLEASANTON
Label State: CA
Label Zip Code: 94588
Label Country: US
Label Emergency Number: 415-847-6100
Year Procured: UNK

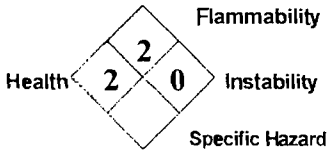
BAKER HUGHES
Baker Petrolite

Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Product Name	TOLAD® 3786 ADDITIVE	Code	T3786
Supplier	Baker Petrolite A Baker Hughes Company 12645 W. Airport Blvd. (77478) P.O. Box 5050 Sugar Land, TX 77487-5050 For Product Information/MSDSs Call: 800-231-3606 (8:00 a.m. - 5:00 p.m. est, Monday - Friday) 281-276-5400	Version	5.0
Material Uses	Cold Flow Improver.	Effective Date	7/19/2007
24 Hour Emergency Numbers	CHEMTREC 800-424-9300 (U.S. 24 hour) Baker Petrolite 800-231-3606 (001)281-276-5400 CANUTEC 613-996-6666 (Canada 24 hours) CHEMTREC Int'l 01-703-527-3887 (International 24 hour)	Print Date	7/19/2007
			® a trademark of Baker Hughes, Inc.

National Fire Protection Association (U.S.A.)



Section 2. Hazards Identification

Physical State and Appearance	State: Waxy solid. Solid., Color: Amber., Odor: Aromatic hydrocarbon.
CERCLA Reportable Quantity	Xylene, 14343 lbs of this product.
Hazard Summary	WARNING. May cause chronic effects. May be irritating to eyes, skin and respiratory tract. May cause central nervous system (CNS) effects if inhaled.
Routes of Exposure	Skin (Contact), Eyes, Inhalation.
Potential acute health effects	
Eyes	May cause eye irritation.
Skin	May be irritating to skin.
Inhalation	May cause central nervous system (CNS) effects if inhaled. May be irritating to lungs.
Ingestion	Not considered a likely route of exposure, however, may be harmful or cause irritation if swallowed.
Medical Conditions aggravated by Exposure	Exposure to this product may aggravate medical conditions involving the following: blood system, kidneys, nervous system, liver, respiratory tract, skin/epithelium, eyes.
See Toxicological Information (section 11)	
Additional Hazard Identification Remarks	May be harmful if ingested. This product may be aspirated into the lungs during swallowing or vomiting of swallowed material. Aspiration into the lungs may produce chemical pneumonitis, pulmonary edema, and hemorrhaging. Repeated or prolonged contact may cause dermatitis (inflammation) and defatting of the skin (dryness). When this product is heated above its melting point, contact with the heated product will cause thermal burns to the skin and eyes. Product is heated to 82.2°C (180°F) to 93.3°C (200°F).

Continued on Next Page

Section 3. Composition and Information on Ingredients

Name	CAS #	% by Weight
Light aromatic naphtha	64742-95-6	10 - 30
1,2,4-Trimethylbenzene	95-63-6	5 - 10
1,3,5-Trimethylbenzene	108-67-8	1 - 5
1,2,3-Trimethylbenzene	526-73-8	1 - 5

See Section 8 for information on permissible exposure limits and threshold limit values.

Section 4. First Aid Measures

Eye Contact	Flush eyes with plenty of water for 15 minutes, occasionally lifting upper and lower eyelids. Get medical attention immediately.
Skin Contact	Remove and launder or clean contaminated clothing and shoes. Wash with soap and water for at least 15 minutes or until no evidence of material remains. Get medical attention if irritation occurs.
Inhalation	Remove to fresh air. Oxygen may be administered if breathing is difficult. If not breathing, administer artificial respiration and seek medical attention. Get medical attention if symptoms appear.
Ingestion	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never induce vomiting or give anything by mouth to a victim who is unconscious or having convulsions. Get medical attention if symptoms appear.
Notes to Physician	Not available.
Additional First Aid Remarks	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Not regulated as flammable or combustible.
OSHA Flammability Class	IIIA
Products of Combustion	These products are carbon oxides (CO, CO_2).
Fire Hazards in Presence of Various Substances	Open Flames/Sparks/Static. Heat.
Fire Fighting Media and Instructions	In case of fire, use foam, dry chemicals, or CO2 fire extinguishers. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and public waterways.
Protective Clothing (Fire)	Do not enter fire area without proper personal protective equipment, including NIOSH approved self-contained breathing apparatus.
Special Remarks on Fire Hazards	Not available.

Continued on Next Page

Section 6. Accidental Release Measures

Spill	Put on appropriate personal protective equipment. Evacuate surrounding areas, if necessary. Vacuum or carefully scoop up spilled materials and place in an appropriate container for disposal. Waste must be disposed of in accordance with federal, state and local environmental control regulations.
Other Statements	If RQ (Reportable Quantity) is exceeded, report to National Spill Response Office at 1-800-424-8802.
Additional Accidental Release Measures Remarks	Not available.

Section 7. Handling and Storage

Handling and Storage	Put on appropriate personal protective equipment. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors or dusts. Use only with adequate ventilation. Store in a dry, cool and well ventilated area. Keep away from incompatibles. Keep container tightly closed and dry.
Additional Handling and Storage Remarks	Not available.

Section 8. Exposure Controls/Personal Protection

Exposure Limits	Light aromatic naphtha	Not available.
	1,2,4-Trimethylbenzene	Not available.
	1,3,5-Trimethylbenzene	Not available.
	1,2,3-Trimethylbenzene	Not available.
Additional Information on Exposure Limits	While trimethylbenzene isomers do not have exposure limits, trimethylbenzene (mixed isomers) (CAS No. 25551-13-7) has TWA value of 25 ppm for both ACGIH and OSHA (revoked limit).	
Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors or particles below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.	

Personal Protection

Personal Protective Equipment recommendations are based on anticipated known manufacturing and use conditions. These conditions are expected to result in only incidental exposure. A thorough review of the job tasks and conditions by a safety professional is recommended, however, to determine the level of personal protective equipment appropriate for these job tasks and conditions.

Eyes Chemical safety goggles.

Body Wear long sleeves to prevent repeated or prolonged skin contact.

Respiratory Respirator use is not expected to be necessary under normal conditions of use. In poorly ventilated areas, emergency situations or if exposure levels are exceeded, use NIOSH approved full face respirator.

Hands Chemical resistant gloves. Nitrile or Neoprene gloves. If product is heated, wear thermal protective gloves.

Feet Chemical resistant boots or overshoes.

Other information Not available.

Additional Exposure Control Remarks	Not available.

Continued on Next Page

Section 9. Physical and Chemical Properties

Physical State and Appearance	Waxy solid. Solid.	Odor	Aromatic hydrocarbon.
pH	Not available.	Color	Amber.
Specific gravity	0.882 - 0.894 @ 54°C (130°F)		
Density	7.35 - 7.45 lbs/gal @ 54°C (130°F)		
Flash Points	Closed cup: 63°C (145.4°F). (SFCC)		
Flammable Limits	L.E.L. Not available. U.E.L. Not available.		
Autoignition Temperature	Not available.		
Initial Boiling Point	Not available.		
Boiling Point	Not available.		
Vapor Density	>1 (Air = 1)		
Vapor Pressure	6.5 - mm Hg @ 38°C (100°F) Calculated Value for all Components.		
Evaporation Rate	Not Available or Not Applicable for Solids.		
VOC	Not available.		
Viscosity	Not available.		
Pour Point	43.3°C (110°F)		
Solubility (Water)	Insoluble		
Physical Chemical Comments	Not available.		

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Oxidizing material.
Hazardous Decomposition Products	Not applicable.
Hazardous Polymerization	Hazardous polymerization is not expected to occur.
Special Stability & Reactivity Remarks	Not available.

Continued on Next Page

Section 11. Toxicological information

Component Toxicological Information

Acute Animal Toxicity

Light aromatic naphtha	ORAL (LD50): Acute: 2900 mg/kg [Rat]. 8400 mg/kg [Rat].
1,2,4-Trimethylbenzene	ORAL (LD50): Acute: 5000 mg/kg [Rat]. VAPOR (LC50): Acute: 18000 mg/m^3 4 hour/hours [Rat].
1,3,5-Trimethylbenzene	VAPOR (LC50): Acute: 24000 mg/m^3 4 hour/hours [Rat].
1,2,3-Trimethylbenzene	Not available.

Chronic Toxicity Data

1) Light aromatic naphtha

Solvent naphtha (petroleum), light aromatic is a component of this product. Solvent naphtha (petroleum), light aromatic may cause damage to the peripheral nerves, resulting in numbness or tingling of the extremities with chronic (long term) exposure to high concentrations. (Micromedex) Rats exposed for 4 months to 1700 ppm of a solvent similar to this product showed evidence of mild damage to the liver, lungs and kidneys. These effects were not seen in rats exposed for one year to 350 ppm of another similar solvent. Rats exposed to vapors of a similar solvent during pregnancy showed embryo/fetotoxicity at concentrations producing maternal toxicity.

In response to a TSCA test rule, several studies of a solvent similar to this product were completed. Mutagenicity studies and a rat inhalation neurotoxicity study were negative. In a mouse developmental effects study, reduced fetal body weight was seen but no teratogenicity. A rat reproductive effects study demonstrated toxicity but little effect on reproductive parameters. (Vendor MSDS)

Ingestion has produced Central Nervous System effects in laboratory animals. (EPA/OTS 87-8214199 and 88-920000348)

2) 1,2,4-Trimethylbenzene

1,2,4-Trimethylbenzene, also know as pseudocumene, is a component of this product. Chronic pseudocumene exposure may provoke bronchospasm with cough and wheezing (Plunkett, 1976; ACGIH, 1991; Battig et al, 1956). Respiratory distress was noted in experimental animals following sub acute inhalation exposure (Gage, 1970). Nervousness and anxiety were noted with chronic occupational exposure (Battig et al, 1956; ACGIH, 1991).

At the time of this review, no studies were found on the potential adverse reproductive effects of pseudocumene in humans, but trimethylbenzenes (including pseudocumene) can cross the placental barrier (Clayton & Clayton, 1994; Doroty et al, 1976). In an experimental animal study, offspring born to pregnant rats exposed to pseudocumene were healthy at birth and grew normally (Cameron et al, 1938).

Blood effects such as anemia and delayed clotting time have been noticed in workers chronically exposed to a solvent containing trimethylbenzene. The blood effects, however, may have been due to a contaminant in the solvent such as benzene (a known blood toxin).

3) 1,3,5-Trimethylbenzene

1,3,5-Trimethylbenzene (Mysitylene) is a component of this product. Chronic asthmatic-like bronchitis may be a delayed chronic hazard (EPA, 1985; Laham, 1987; HSDB, 1997). Nervousness, tension, and anxiety have been noted in chronically exposed workers with exposure to a mixture of solvents including mesitylene (HSDB, 1997). Elevated alkaline phosphates and SGOT(liver enzymes) levels have been noted in chronic animal inhalation studies (Clayton & Clayton, 1994). These effects have not been reported in exposed humans. (Reprotext)

Thrombocytopenia (a lack of platelets in the blood) with bleeding from the gums and nose and mild anemia may occur with chronic exposure to mesitylene as a component of the commercial solvent mixture, "Fleet-X-DV-99" (Plunkett, 1976; Finkel,

Continued on Next Page

1983; HSDB, 1997). Coagulation (clotting of the blood) times were delayed by about 40% in a group of workers chronically exposed to a mixture of solvents containing about 30% mesitylene (Laham, 1987). These hematological disorders may have been due to a contaminant, such as benzene (Hathaway et al, 1996). Thrombocytosis (an increase of platelets in the blood) and thrombocytopenia have been noted in rabbits (Clayton & Clayton, 1994). (Reprotext)

1,3,5-Trimethylbenzene has been positive in a mutagenicity assay (Lewis, 1992). (Reprotext)

4) 1,2,3-Trimethylbenzene

Not available.

Product Toxicological Information	
Acute Animal Toxicity	Not available.
Target Organs	blood system, kidneys, nervous system, liver, respiratory tract, skin/epithelium, eyes.
Other Adverse Effects	Not available.

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Biodegradable/OECD	Not available.
Toxicity of the Products of Biodegradation	Not available.
Special Remarks	Not available.

Section 13. Disposal Considerations

Responsibility for proper waste disposal rests with the generator of the waste. Dispose of any waste material in accordance with all applicable federal, state and local regulations. Note that these regulations may also apply to empty containers, liners and rinsate. Processing, use, dilution or contamination of this product may cause its physical and chemical properties to change.

Additional Waste Remarks	Not available.

Section 14. Transport Information

DOT Classification	ELEVATED TEMPERATURE LIQUID, FLAMMABLE, N.O.S., 3, UN3256, III	
DOT Reportable Quantity	Xylene, 14343 lbs of this product.	
Marine Pollutant	Not applicable.	
Additional DOT Information	This material is not regulated for transportation if shipped at a temperature <62.8 C(145 F) and in a package that does not meet or exceed the Reportable Quantity (RQ).	
Emergency Response Guide Number	128	

Continued on Next Page

Section 15. Regulatory Information

HCS Classification	Target organ effects. Irritant.
U.S. Federal Regulations	
Environmental Regulations	Extremely Hazardous Substances: Not applicable to any components in this product. SARA 313 Toxic Chemical Notification and Release Reporting: 1,2,4-Trimethylbenzene; SARA 302/304 Emergency Planning and Notification substances: Not applicable to any components in this product. Hazardous Substances (CERCLA 302): Not applicable to any components in this product. SARA 311/312 MSDS distribution - chemical inventory - hazard identification: fire; immediate health hazard; delayed health hazard; Clean Water Act (CWA) 307 Priority Pollutants: Not applicable to any components in this product. Clean Water Act (CWA) 311 Hazardous Substances: Not applicable to any components in this product. Clean Air Act (CAA) 112(r) Accidental Release Prevention Substances: Not applicable to any components in this product.
Threshold Planning Quantity (TPQ)	Not applicable.
TSCA Inventory Status	All components are included or are exempted from listing on the US Toxic Substances Control Act Inventory. This product does not contain any components that are subject to the reporting requirements of TSCA Section 12(b) if exported from the United States.
State Regulations	State specific information is available upon request from Baker Petrolite.
International Regulations	
Canada	All components are compliant with or are exempted from listing on the Canadian Domestic Substance List.
WHMIS (Canada)	D-2A, D-2B
European Union	All components are included or are exempted from listing on the European Inventory of Existing Commercial Chemical Substances or the European List of Notified Chemical Substances.
	International inventory status information is available upon request from Baker Petrolite for the following countries: Australia, China, Korea (TCCL), Philippines (RA6969), or Japan.
Other Regulatory Information	No further regulatory information is available.

Section 16. Other Information

Other Special Considerations	File 988 09/04/02 - Changes to Sections 3. 10/13/03 - Changes to Sections 2, 3, 4, 5, 8, 9, 11, 14 and 15. 10/28/03 Changes to Sections 3, 4, 5, 9, 14, and 15 08/06/04 - Changes to Sections 8, 9 and 15. 07/19/07 - Changes to Sections 2, 3, 5, 8, 9, 14 and 15.

In April, 2005, a number of format changes were made. The most notable of these were switching Sections 2 and 3, moving the exposure limits to Section 8, and moving the flash point from Section 5 to Section 9.

Baker Petrolite Disclaimer

Continued on Next Page

NOTE: The information on this MSDS is based on data which is considered to be accurate. Baker Petrolite, however, makes no guarantees or warranty, either expressed or implied of the accuracy or completeness of this information.

The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

This MSDS was prepared and is to be used for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

MATERIAL SAFETY DATA SHEET: NC-123 PLUS AEROSOL

(000000-000000- -5625)

DATE OF ISSUE 9/14/2004

SUPERSEDES 21/01/2000

SECTION I - GENERAL INFORMATION

Chemical Name & Synonyms

Trade Name & Synonyms
NC-123 PLUS AEROSOL

Chemical Family:
SOLVENT MIXTURE

Formula Mixture --> X

Manufacturer's Name:
CHEMSEARCH DIV. OF NCH CORP.

Address:
BOX 152170
IRVING, TX 75015

Prepared By:	Product Code Number	Emergency Phone Number
M McDowell/Chemist	5625	800-424-9300

SECTION II - HAZARDOUS INGREDIENTS
THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

Chemical Name (Ingredients)	Hazard	TLV	PEL	STEL	CAS #
ALIPHATIC PETROLEUM DISTILLATES	IRR/COMB	100 PPM $1	500 PPM $2	N/E	#
MINERAL OIL	IRRITANT	5 MG/M3$$1	5 MG/M3$$2	10MG/M3$$1	8012-95-1
BARIUM SULFONATE	IRRITANT	0.5MG/M3*1	0.5MG/M3*2	N/E	61790-48-5
SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE	IRRITANT	5 MG/M3$$1	5 MG/M3$$2	10MG/M3$$1	64741-88-5
SOLVENT REFINED LIGHT NAPHTHENIC DISTILLATE	IRRITANT	5 MG/M3$$1	5 MG/M3$$2	10MG/M3$$1	64741-97-5
SEVERELY HYDROTREATED LIGHT PARAFFINIC DISTILLATE	IRRITANT	5 MG/M3$$1	5 MG/M3$$2	10MG/M3$$1	64742-55-8
SEVERELY HYDROTREATED LIGHT NAPHTHENIC DISTILLATE	IRRITANT	5 MG/M3$$1	5 MG/M3S$2	10MG/M3$$1	64742-53-6
PROPANE	FLAM/A$PHY	1000PPM**1	1000 PPM 1	N/E	74-98-6
N-BUTANE	FLAM/ASPHY	1000PPM**1	N/E 2	N/E	106-97-8

$ STODDARD SOLVENT VALUES
$S OIL MIST VALUES
* BARIUM VALUES
** ALIPHATIC HYDROCARBON GA$ES
# 64742-47-8, 64742-88-7, 8052-41-3

SECTION IIa - NON-HAZARDOUS INGREDIENTS
(NON-HAZARDOUS INGREDIENT NAMES AND CAS NUMBERS ARE PROTECTED UNDER NJ TRADE)

Secret Registry #: 40363-5098

SECTION III - PHYSICAL DATA

Boiling Point (F):	300°	Specific Gravity (H20=1):	0.73
Vapor Pressure (MM HG):	2529	Color:	AMBER
Vapor Density (Air=1):	1.7	Odor:	SOLVENT
PH @ 100% :	N/A	Clarity:	TRANSPARENT
% Volatile by Volume:	92	Evaporation Rate (BU A/C=1):	36.7
H20 Solubility:	INSOLUBLE	Viscosity:	NON-VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

Flash Point	Flammable Limits	LEL	UEL
106°F / SETAFLASH	PROPANE/ISOBUTANE	1.8	9.5

Extinguishing Media
X <--Foam <--Alcohol Foam X <--C02 X <--Dry Chemical X <--Hater Spray <--Other

Special Fire Fighting Procedures:
FIREFIGHTERS SHOULD HEAR A SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE GEAR. COOL FIRE-EXPOSED CONTAINERS WITH WATER SPRAY TO PREVENT BURSTING.

Unusual Fire and Explosion Hazards:
VAPOR$ ARE HEAVIER THAN AIR AND MAY TRAVEL TO DISTANT AND/OR LOW-LYING SOURCES OF IGNITION AND FLASHBACK. PRODUCT MAY PRODUCE A FLOATING FIRE HAZARD AS LIQUID FLOATS ON WATER. FLAME EXTENSION IS 24 INCHES, BURNBACK IS 4 INCHES.

Aerosol Level (NFPA 30B): 3

NFPA 704 Hazard Bating (0=Insignificant 1=Siight 2=Moderate 3=High 4=Extreme)
1 <--Healtb 4 <--Flammability 0 <--Instability <--Special

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value:
NOT ESTABLISHED FOR MIXTURE. SEE SECTION II.

Effects ot Overexposure:

SECTION V - HEALTH HAZARD DATA (Continued)

-Acute (Short Term Exposure)

EYE CONTACT: CAUSES IRRITATION SEEN AS STINGING, TEARING, REDNESS, AND A BURNING SENSATION.
SKIN CONTACT: CAUSES IRRITATION SEEN AS ITCHING, REDNESS, AND A BURNING SENSATION. PROLONGED OR REPEATED CONTACT AS FROM CLOTHING WET WITH MATERIAL MAY CAUSE DRYING, DEFATTING, AND CRACKING OF THE SKIN.
INHALATION: MAY CAUSE RESPIRATORY IRRITATION SEEN AS COUGHING, SNEEZING, AND A BURNING SENSATION OF THE NOSE AND THROAT. AT LOW VAPOR CONCENTRATIONS, NO HARMFUL EFFECTS ARE EXPECTED. AT HIGH VAPOR CONCENTRATIONS, INHALATION MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS HEADACHE, DISSINESS, DROWSINESS, WEAKNESS, UNCONCIOUSNESS, POSSIBLE ANESTHETIC EFFECTS FROM CENTRAL NERVOUS SYSTEM DEPRESSION, AND MAY BE FATAL.
INGESTION: MAY CAUSE IRRITATION WITH POSSIBLE NAUSEA, VOMITING, AND DIARRHEA. INGESTION AND SUBSEQUENT VOMITING OF THIS PRODUCT CAN LEAD TO ASPIRATION OF THE PRODUCT INTO THE LUNGS WHICH CAN CAUSE DAMAGE AND MAY BE FATAL.

-Chronic (Long Term Exposure)

ON RARE OCCASIONS, PROLONGED AND REPEATED EXPOSURE TO HYDROCARBON MIST POSES A RISK OF CHRONIC LUNG INFLAMMATION. THIS CONDITION IS USUALLY ASYMPTOMATIC AS A RESULT OF REPEATED SMALL ASPIRATIONS. SHORTNESS OF BREATH AND COUGHING ARE THE MOST COMMON SYMPTOMS. ASPIRATION MAY LEAD TO PULMONARY EDEMA AND HEMORRHAGE AND MAY BE FATAL. SIGNS OF LUNG INVOLVEMENT INCLUDE INCREASED RESPIRATION AND HEART RATES AS WELL AS A BLUISH DISCOLORATION OF THE SKIN. CHRONIC SKIN CONTACT MAY PROMOTE DERMATITIS AND OIL ACNE. IN RARER CASES, AN INCREASED SENSTIVITY TO SUNLIGHT (PHOTOSENSITIVITY) MAY OCCUR. CHRONIC ABUSE OF SIMILAR MATERIALS HAS BEEN ASSOCIATED WITH IRREGULAR HEART RHYTHMS AND CARDIAC ARREST.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE ARE PRE-EXISTING RESPIRATORY AND SKIN CONDITIONS SUCH AS ASTHMA, EMPHYSEMA, AND DERMATITIS.
TARGET ORGANS: HEART, LIVER, AND CENTRAL NERVOUS SYSTEM. THE PRIMARY ROUTES OF EXPOSURE ARE SKIN AND EYE CONTACT.

Primary Routes of Entry: X <--Inhalation <--Ingestion <--Absorption

Emergency and First Aid Procedures:

-Inhalation:

REMOVE FROM THE AREA TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

-Eye Contact:

RINSE THE EYES WITH WATER. REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING WITH PLENTY OF WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

-Skin Contact:

WASH AFFECTED AREAS WITH LARGE AMOUNTS OF SOAP AND WATER FOR 15 MINUTES. REMOVE CONTAMINATED CLOTHING AND SHOES. SEEK MEDICAL ATTENTION IF IRRITATION PERSISTS. WASH CLOTHING AND CLEAN SHOES BEFORE REDSE.

-Ingestion:

GIVE 3 TO 4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS OR CONVULSING PERSON.

-Notes to Physician:

INGESTION AND SUBSEQUENT VOMITING OF THIS PRODUCT CAN LEAD TO ASPIRATION OF THE PRODUCT INTO THE LUNGS WHICH CAN CAUSE DAMAGE AND MAY BE FATAL. DEPENDING ON THE AMOUNT INGESTED AND RETAINED AS WELL AS THE TOXICITY OF THE PRODUCT, GASTRIC LAVAGE SHOULD BE CONSIDERED. KEEP PATIENT'S HEAD BELOW HIPS TO PREVENT PULMONARY ASPIRATION. IF COMATOSE, A CUFFED ENDOTRACHAEL TUBE WILL PREVENT ASPIRATION.

SECTION VI - TOXICITY INFORMATION

Product Contains Chemicals Listed as Carcinogen or Potential Carcinogen By:
IARC--> No NTP--> No OSHA--> No ACGIH--> No OTHER--> No

VOC CONTENT: 80% BY WEIGHT, 92.1% BY VOLUME, 656.9 G/L

ALIPHATIC PETROLEUM DISTILLATES
ORL-RAT LD50: >10 G/KG 4.
IHL-RAT LC50: >290 PPM 4.
SKN-RBT LD50: >3 G/KG 4.
SKN SENSITIZER: NO 4.
SKN IRRITATION: SLIGHT 4.
EYE IRRITATION: SLIGHT 4.

THIS HYDROCARBON WAS ADMINISTERED ORALLY 5 DAYS/WEEK TO MALE AND FEMALE RATS AT 100, 500, OR 1000 MG/KG FOR 13 WEEKS. AN ADDITIONAL GROUP WAS DOSED WITH 100 MG/KG FOR 13 WEEKS FOLLOWED BY A 4-WEEK RECOVERY PERIOD. NO MORTALITIES OR CLINICAL EFFECTS WERE OBSERVED. LIVER AND KIDNEY WEIGHTS FOR THE 500 AND 1000 MG/KG EXPOSURE GROUPS WERE SIGNIFICANTLY INCREASED. AFTER THE 4-WEEK RECOVERY PERIOD, THERE WERE NO DIFFERENCES IN ORGAN WEIGHTS. 4.

HYDROCARBON MISTS, AND MINERAL OIL MISTS DERIVED FROM HIGHLY REFINED OILS, ARE REPORTED TO HAVE LOW ACUTE AND SUB-ACUTE TOXICITIES IN ANIMALS. EFFECTS FROM SINGLE AND SHORT-TERM REPEATED EXPOSURES TO HIGH CONCENTRATIONS WELL ABOVE APPLICABLE WORKPLACE EXPOSURE LEVELS INCLUDE LUNG INFLAMMATORY REACTION, LIPOID GRANULOMA FORMATION, AND LIPOID PNEUMONIA. IN ACUTE AND SUB-ACUTE STUDIES INVOLVING EXPOSURES TO LOWER CONCENTRATIONS AT OR NEAR CURRENT WORK PLACE EXPOSURE LEVELS PRODUCED NO SIGNIFICANT TOXICOLOGICAL EFFECTS. IN LONG TERM STUDIES (UP TO TWO YEARS) NO CARCINOGENIC EFFECTS HAVE BEEN REPORTED IN ANY ANIMAL SPECIES TESTED. THESE PETROLEUM DISTILLATES ARE SEVEBELY HYDROTREATED, SEVERELY SOLVENT EXTRACTED, AND/OR PROCESSED BY MILD HYDROTREATMENT AND EXTRACTION. FOR THIS REASON, THEY ARE NOT CLASSIFIED AS CANCER HAZARDS. 3.

MINERAL OIL
IHL-RAT LC50: 2062 PPM/4H 4.
ORL-RAT LD50: 5000 MG/RG 3.
SKN-RBT SDT: 100 MG/24H MILD 3.
EYE-BBT SDT: 250 MG/5D MODERATE 3.

BARIUM SULFONATE
NO TOXICITY DATA AVAILABLE

SOLVENT REFINED LIGHT PARAFFINIC DISTILLATE
ORL-RAT LD50: >15 G/KG 4.
SKN-RBT LD50: >5 G/KG 4.

SOLVENT REFINED LIGHT NAPHTHENIC DISTILLATE
ORL-RAT LD: >5 G/KG 4.
SKN-RBT LD: >5 G/KG 4.

SEVERELY HYDROTREATED LIGHT PARAFFINIC DISTILLATE
NO TOXICITY DATA AVAILABLE

SEVERELY HYDROTREATED LIGHT NAPHTHENIC DISTILLATE
ORL-RAT LD: >5 G/KG 4.
SKN-RBT LD: >2 G/KG 4.
SKN-RBT SDT: 500 MG SEVERE 4.

PROPANE
IHL-LC50 >40% BY VOLUME 3.

N-BUTANE
IHL-RAT LC50: 658 G/M3/4H 4.

SECTION VI - TOXICITY INFORMATION (Continued)

HUMAN VOLUNTEERS EXPOSED REPEATEDLY TO GASES OF SIMILAR HYDROCARON MIXTURES RANGING FROM 250 TO 1000 PPM EXHIBITED NO CARDIAC OR PULMONARY FUNCTION ABNORMALITIES. 3.

SECTION VII - REACTIVITY DATA

Stability: X <--Stable <--Unstable
Conditions to Avoid:
AVOID HEAT, HOT SURFACES, SPARKS, AND OPEN FLAMES.

Incompatibility (Materials to Avoid):
STRONG OXIDISING AGENTS SUCH AS CHLORINE BLEACH AND CONCENTRATED HYDROGEN PEROXIDE; STRONG ACIDS AND BASES.

Hazardous Decomposition Products:
OXIDES OF CARBON, NITROGEN, SULFUR, CALCIUM, BARIUM; ALDEHYDES AND SMOKE.

Hazardous Polymerization: <--May Occur X <--Will Not Occur
Conditions to Avoid:
N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled:
DUE TO THE NATURE OF THE AEROSOL PACKAGING, A LARGE SPILL IS UNLIKELY. FOR A SMALL SPILL, WEAR APPROPRIATE PROTECTIVE CLOTHING, VENTILATE THE AREA, ABSORB WITH AN INERT MATERIAL AND TRANSFER ALL MATERIAL INTO A PROPERLY LABELED CONTAINED FOR DISPOSAL. USE CARE AS SPILLS MAY BE SLIPPERY.

Waste Disposal Method(s):
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS. TYPICAL DISPOSAL IS TO WRAP THE EMPTY AEROSOL CONTAINER IN SEVERAL LAYERS OF NEWSPAPER AND DISPOSE OF IN THE TRASH. AEROSOL RECYCLING PROGRAMS ARE AVAILABLE IN MANY AREAS. DO NOT PUNCTURE OR INCINERATE THIS CONTAINER.

Neutraiizing Agent:
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

Required Ventilation:
LOCAL VENTILATION IS RECOMMENDED TO CONTROL EXPOSURE FROM OPERATIONS THAT CAN GENERATE EXCESSIVE LEVELS OF VAPORS OR MISTS. LOCAL VENTILATION IS PREFERRED, BECAUSE IT PREVENTS DISPERSION INTO WORK AREAS BY CONTROLLING IT AT ITS SOURCE.

Respiratory Protection:
RESPIRATORS SHOULD BE SELECTED BY AND USED UNDER THE DIRECTION OF A TRAINED HEALTH AND SAFETY PROFESSIONAL FOLLOWING REQUIREMENTS FOUND IN OSHA'S RESPIRATOR STANDARD (29 CFB 1910.134) AND ANSI'S STANDARD FOB RESPIRATORY PROTECTION (Z88.2-1992). FOR CONCENTRATIONS ABOVE THE TLV AND/OR PEL BUT S THAN 10 TIMES THESE LIMITS, A NIOSH APPROVED HALF-FACEPIECE RESPIRATOR EQUIPPED WITH APPROPRIATE CHEMICAL CARTRIDGES MAY BE USED. FOR ENTRATIONS GREATER THAN 10 TIMES THE TLV AND/OR PEL, CONSULT THE NIOSH RESPIRATOR DECISION LOGIC FOUND IN PUBLICATION NO. 87-116 OR ANSI .2-1992.

Glove Protection:
NEOPRENE OR NITRILE RUBBER GLOVES IF REPEATED OR PROLONGED SKIN CONTACT IS LIKELY. ENSURE COMPLIANCE WITH OSHA'S PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD FOR HAND PROTECTION, 29 CFR 1910.138.

Eye Protection:
SAFETY GLASSES WITH SIDE SHIELDS IF THE METHOD OF APPLICATION PRESENTS THE LIKELIHOOD OF EYE CONTACT. ENSURE COMPLIANCE WITH OSHA'S PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD FOR EYE AND FACE PROTECTION, 29 CFR 1910.133.

Other Protection:
WEAR GENERAL-DUTY WORK CLOTHES AND SHOES. REMOVE OIL SOAKED CLOTHING AND SHOES. WASH CLOTHING AND CLEAN SHOES BEFORE REUSE. A SAFETY SHOWER AND AN EYEWASH STATION SHOULD BE AVAILABLE.

SECTION X - STORAGE AND HANDLING INFORMATION

Storage Temperature: Indoors--> X Outdoors--> Heated--> Refrigerated-->
Minimum Temperature: 30°F. Maximum Temperature: 120°F.

Precautions to be Taken in Handling and Storing:
USE WITH CAUTION AROUND HEAT, SPARKS, PILOT LIGHTS, STATIC ELECTRICITY, AND OPEN FLAME. SOME POROUS MATERIALS SUCH AS RAGS, PAPER, ETC. WHEN WETTED WITH THIS PRODUCT MAY UNDERGO SPONTANEOUS COMBUSTION.

Other Precautions:
KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL DIRECTIONS.

SECTION XI - REGULATORY INFORMATION

Chemical Name	CAS Number	Upper % Limit
BARIUM COMPOUNDS	N/A	5

Those ingredients listed above are subject to the reporting requirements of 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Please call 1-800-527-9919 for additional information if you are a California customer.
This MSDS is not intended for users in the state of California.

SECTION XII - REFERENCES

1. THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH, 2004.
2. OSHA PEL.
3. VENDOR'S MSDS
4. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, CCINFOWeb, 2004.

SECTION XII - REFERENCES (Continued)

ALL THE COMPONENTS OF THIS PRODUCT ARE IN COMPLIANCE WITH THE TOXIC SUBSTANCES CONTROL ACT (TSCA) AND ARE EITHER LISTED ON THE TSCA INVENTORY OR OTHERWISE EXEMPTED FROM LISTING.

IRR:IRRITANT, FLAM/FLAMM:FLAMMABLE, COMB:COMBUSTIBLE, CORR:CORROSIVE CARC:CARCINOGENIC. TOX:TOXIC, N/A:NOT APPLICABLE, N/E:NOT ESTABLISHED, COC:CLEVELAND OPEN CUP, PMCC:PENSKY-MARTIN CLOSED CUP, TCC:TAGLIABUE CLOSED CUP, LEL:LOWER EXPLOSION LIMIT, UEL:UPPER EXPLOSION LIMIT, NFPA:NATIONAL FIRE PROTECTION ASSOCIATION, IARC:INTERNATIONAL AGENCY FOR THE RESEARCH ON CANCER, NTP:NATIONAL TOXICOLOGY PROGRAM, OSHA:OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION, ACGIH:AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, TLV:THRESHOLD LIMIT VALUE, PEL:PERMISSIBLE EXPOSURE LIMIT, STEL:SHORT-TERM EXPOSURE LIMIT, MLD:MILD, MOD:MODERATE, SEV:SEVERE, MUT:MUTAGENIC, ASPHYX:ASPHYXIANT, PNOS:PARTICLES (INSOLUBLE) NOT OTHERWISE SPECIFIED, SDT:STANDARD DRAIZE TEST, ORL:ORAL, IHL:INHALATION, HMN:HUMAN

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

CHEMSEARCH DIV. OF NCH CORP. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage, or disposal of the product.

ITEM: 1D267 - Belt Dressing 10 Oz

PICK_REQ: 1014770341 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A7199**

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A7199

Related Grainger Item: 1D267 - Belt Dressing 10 Oz

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT & COMPANY IDENTIFICATION

PRODUCT NAME: BELT DRESSING

PRODUCT NUMBER(S): 03065, 73065, 83065

MANUFACTURED BY:
CRC INDUSTRIES, INC.
885 LOUIS DRIVE
WARMINSTER, PA 18974
(215) 674-4300

24-HOUR EMERGENCY INFORMATION:
CHEMTREC: (800) 424-9300

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	ACGIH TLV	OSHA PEL	OTHER LIMITS	%
POLYBUTENE	9003-29-6	NE	NE	NE	2-15
ISOHEXANES	107-83-5	500 PPM	500 PEM	NE	55-75
PROPANE	74-98-6	NE	1000 PEM	NE	10-20
ISOBUTANE	75-28-5	NE	NE	1000 PIM	10-20
n-HEXANE	110-54-3	50 PPM	50 PEM	NE	<1

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE & ODOR: LIGHT AMBER LIQUID.

DANGER:
EXTREMELY FLAMMABLE. HARMFUL OR FATAL IF SWALLOWED. CONTENTS UNDER PRESSURE.

POTENTIAL HEALTH EFFECTS:
INHALATION: DIZZINESS, HEADACHES, ANESTHESIA AND UNCONSCIOUSNESS.
EYES: IRRITATION, PAIN
SKIN: IRRITATION, DEFATTING
INGESTION: NA

CARCINOGENICITY:
OSHA: NO
IARC: NO
NTP: NO

CHRONIC OVEREXPOSURE:
REPEATED OVEREXPOSURE MAY CAUSE LIVER AND KIDNEY EFFECTS.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: NONE IDENTIFIED.

SECTION 4: FIRST AID MEASURES

INHALATION: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NECESSARY.

EYES: FLUSH WITH LARGE AMOUNTS OF WATER FOR 15 MINUTES.

SKIN: REMOVE CONTAMINATED CLOTHING AND WASH AREA WITH SOAP AND WATER.

INGESTION: CALL A PHYSICIAN. DO NOT INDUCE VOMITING.

SECTION 5: FIRE-FIGHTING MEASURES

FLASH POINT: <20 DEG. F
METHOD: TCC

LEL: 1.8
UEL: 9.5

EXTINGUISHING MEDIA: DRY CHEMICAL AND FOAM

HAZARDOUS COMBUSTION PRODUCTS: CARBON MONOXIDE AND HYDROGEN CHLORIDE

FIRE-FIGHTING INSTRUCTIONS:
REMOVE CONTAINERS FROM FIRE AREA IF POSSIBLE. USE SELF-CONTAINED BREATHING APPARATUS FOR FIRE FIGHTING. AEROSOL CANS MAY EXPLODE IF HEATED ABOVE 120 DEG. F.

NFPA:
HEALTH 2
FLAMMABILITY 4
REACTIVITY 0

HMIS:
HEALTH 2
FLAMMABILITY 4
REACTIVITY 0
PPE B

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPILL/LEAK PROCEDURES:
USUALLY NOT A PROBLEM WITH AEROSOLS. AREA SHOULD BE VENTILATED. ABSORBENT SHOULD BE USED TO PICK UP EXCESS MATERIAL. ALL USED AND UNUSED PRODUCT SHOULD BE DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

SECTION 7: HANDLING AND STORAGE

HANDLING PROCEDURES:
STORE IN A COOL, DRY AREA. AEROSOL CANS MUST BE MAINTAINED BELOW 120 DEG. F TO PREVENT CANS FROM EXPLODING. LEVEL III.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
ADEQUATE TO PREVENT ACCUMULATION OF VAPORS. USE MECHANICAL MEANS IF NECESSARY TO MAINTAIN LEVELS BELOW THE EXPOSURE LIMITS. IF WORKING IN A CONFINED SPACE, FOLLOW APPLICABLE OSHA REGULATIONS.

RESPIRATORY:
USE NIOSH/MSHA COMPLIANT RESPIRATORS OR SELF-CONTAINED BREATHING APPARATUS ABOVE EXPOSURE LIMITS. FOLLOW OSHA REGULATIONS 29 CFR 1910.134.

PROTECTIVE CLOTHING/EQUIPMENT:
WEAR CHEMICALLY PROTECTIVE GLOVES AND SAFETY GLASSES. USE A SPLASH APRON AND BOOTS IF SPLASHING OCCURS.

SECTION 9: PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE: LIQUID

APPEARANCE & ODOR: LIGHT AMBER LIQUID

SPECIFIC GRAVITY: .6783

BOILING POINT: 141 DEG. F (INITIAL)

FREEZING POINT: ND

VAPOR PRESSURE: ND

EVAPORATION RATE: NA

VAPOR DENSITY (AIR = 1): >AIR

pH: NA

SOLUBILITY: SOLUBLE.

VOLATILE ORGANIC COMPOUNDS:
%: 92
G/L: 578
LBS./GAL: 4.82

SECTION 10: STABILITY AND REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: NO

CHEMICAL INCOMPATIBILITIES: STRONG OXIDIZERS. ALUMINUM AND/OR ZINC POWDER

CONDITIONS TO AVOID: EXTREME TEMPERATURES

HAZARDOUS DECOMPOSITION PRODUCTS: NONE

SECTION 11: TOXICOLOGICAL INFORMATION

LONG-TERM TOXICOLOGICAL STUDIES HAVE NOT BEEN CONDUCTED FOR THIS PRODUCT. SEE SECTION 3 OF THIS MSDS FOR ACUTE SYMPTOMS OF OVEREXPOSURE AND CARCINOGENICITY INFORMATION.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: NO DATA AVAILABLE.

ENVIRONMENTAL FATE: NO DATA AVAILABLE FOR BIODEGRADATION.

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL:
THIS MATERIAL IF DISCARDED MAY BE HAZARDOUS WASTE UNDER U.S. EPA RCRA REGULATIONS. ALL DISPOSAL ACTIVITIES MUST COMPLY WITH FEDERAL, STATE AND LOCAL REGULATIONS. CONTACT YOUR LOCAL OR STATE ENVIRONMENTAL AGENCY FOR SPECIFIC RULES. DO NOT DUMP INTO SEWERS, ON THE GROUND OR INTO ANY BODY OF WATER.

SECTION 14: TRANSPORTATION INFORMATION

SHIPPING NAME: CONSUMER COMMODITY

HAZARD CLASS: ORM-D

UN NUMBER: NA

PACKING GROUP: NA

LABEL: NA

PLACARD: NA

SPECIAL PROVISIONS: NA

SECTION 15: REGULATORY INFORMATION

TSCA: ALL COMPONENTS ARE EITHER LISTED UNDER TSCA OR ARE EXEMPT.

SARA TITLE III:
SECTION 311/312: ACUTE, PRESSURE
SECTION 313*: n-HEXANE

CERCLA/SUPERFUND (RQ): NA

EXTREMELY HAZARDOUS SUBSTANCES: NO

CALIFORNIA PROP 65: NO

Ɜ SECTION 2 FOR PERCENTAGE

SECTION 16: ADDITIONAL INFORMATION

PREPARED BY: MICHELLE MILBURN

DATE: MARCH 8, 2004

TECHNICAL INPORMATION: (800) 521-3168

CRC#: 00439C

THIS INFDRMATICN IS ACCURATE ID THE BEST OF CRC INDUSTRIES' KNDWLEDGE OR OBTAINED FRCM SOURCES BELIEVED BY CRC ID BE ACCURATE. BEEDRE USING ANY PRODUCT, READ ALL WARNINGS AND DIRECTICNS ON THE LABEL.

CAS: CHEMICAL ABSTRACT SERVICE
PPM: PARTS PER MILLION
TCC: TAG CLOSED CUP
LEL: LOWER EXPLOSIVE LIMIT
UEL: UPPER EXPLOSIVE LIMIT
PPE: PERSONAL PRCTECTICN EQUIPMENT
NA: NOT APPLICABLE
ND: NOT DETERMINED
NE: NOT ESTABLISHED
G/L: GRAMS PER LITER
LBS./GAL: POUNDS PER GALLON
RQ: REPORTABLE QUANTITY

Material Safety Data Sheet
(BWT2KD)

New anti foam

WELLONS
Water Technology

2525 W. Firestone Lane
Vancouver, Washington 98660

Emergency Phone Number:
(800) 535-5053

Date Prepared: March 16, 2004
Revision Date: March 9, 2005
INFOTRAC: 800-535-5053
Product Number: WBWT2KD-SF
Control Number:

SECTION I - IDENTIFICATION

Product Name:	BWT2KD
Synonyms:	Boiler Anti-Foam
Formula:	Proprietary
Product Description:	Boiler Treatment

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredient	Percent	CAS Number	PEL
Polyalkylene glycol monobutyl ether	<25%	9038-95-3	Not established

SECTION III – PHYSICAL/CHEMICAL DATA

Form:	Liquid
Color:	Colorless
Odor:	Characteristic
Boiling Point:	>100 °C >392 °F Decomposes
Freeze Point:	*Pour point* -36 °C -33 °F
Melting Point:	Not Applicable
Vapor Pressure:	< 0.01 mmHg *20* °
Vapor Density (Air=1):	>10
Specific Gravity:	1.012
Density ib./gal (kg/L):	8.44 (1.01)
pH(neat):	2.6 to 3.6
pH(1% solution)	4.2 to 5.2
Solubility in Water:	100% 20 °C
Molecular Weight:	3930 g/mol

SECTION IV – FIRE AND EXPLOSION DATA

Autoignltion:	Not available
Lower Flammability Limit (In Air, %):	Not determined. Non-volatile material.
Upper Flammability Limit (In Air, %):	Not determined. Non-volatile material.
Extinguishing Media:	Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.
Hazardous Combustion Products:	During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/ or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.
Special Fire Fighting Procedures:	Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger or reignition has passed. Fight fire from a protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately with draw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids mayb e oved by flushing with water to protect personnel and minimize property damage. Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.
Unusual Fire and Explosion Hazards:	Container may rupture from gas generation in fire situation. Violent steam generation or eruption may occur upon aplication of direct water stream to hot liquids.

SECTION V – REACTIVITY DATA

Stability:	Thermally stable at typical use temperatures.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Incompatibility:	Avoid contact with: Strong acids. Strong bases. Strong oxidizers.
Hazardous Decomposition Products:	Thermal Decomposition: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon dioxide. Alcohols. Ethers. Hydrocarbons. Ketones. Polymer fragments.

SECTION VI – HEALTH DATA

OSHA PEL:	Not established
Listed Carcinogen:	Did not cause cancer in laboratory animals.
Medical Conditions Aggravated by Overexposure:	.....Excessive exposure may cause lung injury.
Inhalation:	At room temperature, exposure to vapor is minimal due to low volatility; single exposure is not likely to be hazardous. Vapor from heated material or mist may cause effects including irritation to upper repiratory tract and lungs.
Ingestion:	Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.
Eyes:	Essentially nonirritating to eyes. Corneal injury is unlikely.
Skin (Dermal):	Brief contact is essentially nonirritating to skin. Material may be handled at elevated temperatures; contact with the heated material may cause thermal burns.

SECTION VII – FIRST AID

Breathing (Inhalation):	Move person to fresh air; if effects occur, consult a physician.
Swallowing (Ingesfion):	No emergency medical treatment necessary.
Eyes:	Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.
Skin (Dermal):	Wash skin with plenty of water.
Note to Physician:	If bum is present, treat as any thermal bum, after decontamination. Exposure to high concentrations of mist/ aerosol may be associated with delaying lung damage. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION VIII – EMPLOYEE PROTECTION

Respiratory Protection:	For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air purifying respirator.
Eye Protection:	Use safety glasses.
Ventilation Requirements:	Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.
Additional Measures:	Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignltion temperatures possibly result in spontaneous combustion.

Material Safety Data Sheet
(BWT2KD)

SECTION IX – SPILL AND DISPOSAL DATA

Spill:	Contain spilled material if possible. Collect in suitable and properly labeled containers.

SECTION X – TRANSPORTATION DATA

DOT Shipping Name:	Industrial Process Compound, Water Treating, Liquid
UN/NA Number:	None
Packaging Group:	None
Reportable Quantity:	NDA

SECTION XI – OTHER REGULATORY INFORMATION

TSCA Status:	No data available
SARA Section 311:	Chronic: Yes, Fire Hazard: No, Acute: Yes, Reactive Hazard: No, Sudden Release of Pressure Hazard: No
FDA:	Acceptable for use in food processing plants as determined in 21CFR Section 173.310, Food and Drug.
USDA:	Authorized by USDA for use in federally inspected meat and poultry plants.
HMIS Health:	1
HMIS Flammability:	0
HMIS Reactivity:	0
HMIS Personal Protection:	C

SECTION XII – HANDLING AND STORAGE

Handling Procedure:	Avoid breathing mist. Keep container closed. Use with adequate ventilation.
Conditions to avoid:	Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

SECTION XIII – TOXICOLOGICAL AND ECOLOGICAL INFORMATION

Toxicity:	Peroral: Rat; LD_{50} = . 47248 mg/ kg
Toxicity:	Percutaneous: Rabbit; LD_{50} (> 21140) mg/ kg
Toxicity:	Inhalation: Aerosol Rat; 4 hours; LC_{50} = 0.26 mg/l
Aquatic Toxicity Study:	Material is practically non-toxic to aquatic organisms on an acute basis (LC_{50}, EC_{50} >100 mg/L in most sensitive species tested).
Aquatic Toxicity Study:	Toxicity to Aquatic Invertebrates: Water flea Daphnia magna; Immobilization; EC_{50}. Result value: (17000-19000) mg/ l.
Aquatic Toxicity Study:	Toxicity to Fish: Fathead minnow (Pimephales promelas); LC_{50}. Resuh value: (3170-11900) mf/l
BOD:	Biodegradation under aerobic static laboratory conditions is moderate (BOD20 or BOD28/ ThOD between 10 and 40%). BOD (% Oxygen

consumption) Day 5: 6%, Day 10: 13%, Day 15:-, Day 20: 24%, Day 28/ 30-.

SECTION XIV – ADDITIONAL INFORMATION

ABBREVIATIONS

ACGIH=American Conference of Govemmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
TLV=Threshold Limit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average
STEL=Short-Term Exposure Limit

This information is furnished without warranty, expressed or implied, except it is accurate to the best knowledge of Wellons Water Technology. Neither Wellons Water Technology nor any of its distributors assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Wellons Water Technology assumes no legal responsibility for loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use or disposal of this product.

Material Safety Data Sheet
(BWT2HB)

Replace DP-2

WELLONS
Water Technology

2525 W. Firestone Lane
Vancouver, Washington 98660

Emergency Phone Number:
(800) 535-5053

Date Prepared: March 10, 2004
Revision Date: March 9, 2005
INFOTRAC: 800-535-5053
Product Number: WBWT2HB-SF
Control Number:

SECTION I - IDENTIFICATION

Product Name:	BWT2HB
Synonyms:	Boiler Water Treatment
Chemical Family:	Alkali
Formula:	Proprietary
Product Description:	Boiler Treatment

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredient	Percent	CAS Number	PEL
Sodium Hydroxide	1-10%	1310-73-2	8-hour Time Weighted Average
Polyacrylic acid	1-10%	9003-01-4	

SECTION III – PHYSICAL/CHEMICAL DATA

Form:	Liquid
Color:	Colorless
Odor:	Slight Chemical
Boiling Point:	>212 °F
Freeze Point:	<32 °F
Vapor Pressure:	Not applicable
Vapor Density (Air=1):	Not applicable
Specific Gravity:	1.056
Density lb./gal (kg/L):	8.81 (1.056)
pH(neat):	11.5 to 12.5
pH(1% solufion)	10.8 to 11.8
Solubility in Water:	Complete
Evaporation Rate:	Not applicable
Molecular Weight:	Not established

SECTION IV – FIRE AND EXPLOSION DATA

Flashpoint:	None
Extinguishing Media:	Not applicable.
Special Fire Fighting Procedures:	Contact with some metals (particularly magnesium, aluminum and galvanized zinc) can rapidly generate hydrogen, which is explosive.

SECTION V – REACTIVITY DATA

Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Incompatibility:	Avoid contact with organic materials and concentrated acids-may cause violent reactions.

Hazardous Decomposition Products: .....Carbon monoxide.

SECTION VI – HEALTH DATA

OSHA PEL:	2 mg/cu.m. Ceiling. 29 CFR 1910.1000 (Rev. 3/1/89)
Listed Carcinogen:	This chemical is not listed as a carcinogen by NTP, IARC, or OSHA.

Medical Conditions Aggravated by Overexposure:.....None known

Inhalation:	Avoid breathing mists from solutions. Inhalation of mists can cause damage to the upper respiratory tract and to the lung tissue depending on severity of exposure. Effects can range from mild irritation of mucous membranes, severe pneumonitis and destruction of lung tissues. Use only with adequate ventilation. Ventilation must be sufficient to limit employee exposure to this product below permissible exposure limits.
Ingestion:	Do not swallow. Ingestion this material can cause very serious damage to the mucous membranes or other tissues with which contact is made and may be fatal. Do not eat drink or smoke in work area.
Eyes:	Causes severe bums to the eyes. Small quantities can result in pemanent damage and/or loss of vision.
Skin (Dermal):	Do not get on skin or on clothing. Corrosive to skin. Corrosive action causes bums and frequently deep ulcerations with subsequent scarring. Prolonged contact destroys tissue. Mists from solutions can cause irritant dermatitis. Wash thoroughly after handling. Do not eat, drink or smoke in work area.

SECTION VII – FIRST AID

Breathing (Inhalation):	Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment.
Swallowing (Ingestion):	Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do not induce

	vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.
Eyes:	Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.
Skin (Dermal):	Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. Contact a poison control center, emergency room or physician right away as further treatment will be necessary. If skin feels slippery, this product may still be present in sufficient quantities to cause rash or bum. Continue washing until slick skin feeling is gone. Thoroughly clean contaminated clothing and shoes before reuse or discard.

SECTION VIII – EMPLOYEE PROTECTION

Respiratory Protection:	Use a NIOSH approved mist filter respirator for all routine activities when exposure to mists exceed the permissible exosure limits. The respiratory use limitations made by NIOSH or the manufacturer must be observed. Respiratory protection programs must be in accordance with 28 CFR 1910.134.
Eye Protection:	Close fitting chemical safety goggles with faceshield.
Protective Gloves:	Nitrile. Neoprene. Natural mbber.
Protective Clothing:	PVC clothing should be used when necessary to prevent skin contact. (see additional measures)
Ventilation Requirements:	Use local exhaust sufficient to maintain dust/mist levels below permissible exposure limits.
Additional Measures:	Rubber boots with safety toes, mbber aprons, PVC clothing and plastic hard hats should be used when necessary to prevent skin contact. Personal protective clothing and use of equipment must be in accordance with 29 CFR 1910.132 (general requirements), .133 (eye and face protection), and .138 (hand protection).

SECTION IX – SPILL AND DISPOSAL DATA

Spill:	Only trained personnel equipped with NIOSH approved, full facepiece combination dust/mist respirators should be permitted in area. Use appropriate methods, shovels, brooms, and vacuums to clean up the spill. Dike area to contain spill. Reclaim if possible. Or, dilute spill with large amounts of water then neutralize with dilute acid.
Waste Disposal:	Dispose of residues in an approved hazardous waste management facility or by neutralizing and disposing of according to local or permitted regulations. Care must be taken when using or disposing of chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of the chemical materials and/or their containers to prevent environmental contamination. It is your duty to dispose of the chemical materials and/ or their containers in accordance with the Clean Air Act, the Clean Water Act, the

Resource Conservation and Recovery Act, as well as any other relevant Federal, State, or local laws/regulations regarding disposal. Use vacuum truck to pick up neutralized material for proper disposal. Properly neutralized liquid residues (pH 6 to 9) may be disposed of in waste water treatment facilities which allow the discharge of neutral salt solutions. After all visible traces have been removed, flush area with large amounts of water.

SECTION X – TRANSPORTATION DATA

DOT Shipping Name:	Corrosive Liquids, n.o.s.(Contains Sodium Hydroxide), 8 , UN1760, PGIII
UN/NA Number:	UN1760,
Packaging Group:	III
Reportable Quantity:	NDA

SECTION XI – OTHER REGULATORY INFORMATION

SARA Section 302:	Not listed as an Extremely Hazardous Substance.
SARA Section 311:	Acute Health. Reactive Hazard.
SARA Section 312:	Acute Health Hazard. Reactive Hazard.
Sara Section 313:	Not listed.
HMIS Health:	2
HMIS Flammability:	0
HMIS Reactivity:	0
HMIS Personal Protection:	C

SECTION XII – HANDLING AND STORAGE

Storage Requirements:	Avoid contact with organic materials and concentrated acids-may cause violent reactions.
Handling Procedure:	Wear appropriate personal protective equipment when handling this product. Never touch eyes or face with hands or gloves that may be contaminated with this product.
Conditions to avoid:	When making solutions or diluting, only add this material slowly to surface of cold water while stirring. Do not add to warm or hot water, a violent eruption or explosive reaction can result.

SECTION XIII – TOXICOLOGICAL AND ECOLOGICAL INFORMATION

Toxicity:	Acute Inhalation LC50: Corrosive. Skin Irritation: Corrosive. Eye Irritation: Corrosive. Acute Oral LD50: LDL0 (rabbit) 500 mg/kg. Corrosive.
Aquatic Toxicity Study:	Highly toxic to aquatic life. 240 mg/l (Bluegill) 96-hour TLM LC50

SECTION XIV – ADDITIONAL INFORMATION

Additional:	The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures.

ABBREVIATIONS

ACGIH=American Conference of Govemmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
TLV=Threshold Lunit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average
STEL=Short-Term Exposure Limit

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Material Safety Data Sheet
(BWT4BR)

Reference Set-D

WELLONS
Water Technology

2525 W. Firestone Lane
Vancouver, Washington 98660

Emergency Phone Number:
(800) 535-5053

Date Prepared: Febmary 4, 2004
Revision Date: March 9, 2005
INFOTRAC: 800-535-5053
Product Number: WBWT4BR-SF
Control Number:

SECTION I - IDENTIFICATION

Product Name:	BWT4BR
Synonyms:	Phosphate Builder
Chemical Family:	Phosphate Salts
Formula:	Proprietary
Product Description:	Boiler Treatment

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredient	Percent	CAS Number	PEL
Sodium Tripolyphosphate	>50%	7758-29-4	15 mg/m^3 (total dust)

SECTION III – PHYSICAL/CHEMICAL DATA

Form:	Granular Solid
Color:	White
Odor:	No appreciable odor
Melting Point:	@ 760 mm Hg: Begins to melt incongmently @ 522 °C; completely melted @ 622 °C.
Specific Gravity:	Dry, Not Applicable
Density lb./gal (kg/L):	6.3 (NA)
pH(neat):	Dry, Not Applicable
pH(1% solution)	9.2 to 10.2
Solubility in Water:	(g/100 g H2O): 6.0 @ 0 °C, 14.8 @ 25 °C, 16.7 @ 60 °C, 22.2 @ 80 °C, 32.2 @ 100 °C

SECTION IV – FIRE AND EXPLOSION DATA

Flashpoint:	Non combustible
Extinguishing Media:	Not applicable. Product does not bum.

Hazardous Combustion Products: Not applicable.
Unusual Fire and Explosion Hazards: .....None known

SECTION V – REACTIVITY DATA

Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Incompatibility:	None known.

SECTION VI – HEALTH DATA

OSHA PEL:	OSHA and ACGIH have not established specific exposure limits for this material. However, OSHA and ACGIH have established limits for particulates not otherwise classified (PNOC) which are the least stringent exposure limits applicalbe to dusts. OSHA PEL: 15 mg/m^3 TWA; 15 mg/m^3 TWA. ACGIH TLV: 10 mg/m^3 (inhalable) 8-hr TWA; 5 mg/m^3 (respirable) 8-hr TWA; 3 mg/m^3 (respirable) 8-hr TWA. Sodium tripolyphosphate anhydrous contains tetrasodium pyrophosphate which has the following airborne exposure guidelines: OSHA PEL: 15 mg/m^3 TWA; ACGIH TLV: 5 mg/m^3 8-hr TWA. Components referred to herein may be regulated by specific Canadian provincial legislation. Please refer to exposure limits legislated for the province in which the substance will be used.
Inhalation:	This product may cause coughing, chest tightness, runny nose, chest pain and burning throat.
Ingestion:	No more than slightly toxic if swallowed based on toxicity tests. No significant adverse health effects are expected to develop if only small amounts (less than a mouthful) are swallowed. Swallowing large quantities may cause gastrointestinal tract irritation, nausea, vomiting, and diarrhea.
Eyes:	No more than slightly irritating based on toxicity studies. The dry powder may cause foreign body irritation in some individuals.
Skin (Dermal):	No more than slightly toxic or slightly irritating based on toxicity studies. Prolonged contact with the dry powder may cause drying or chapping of the skin.

SECTION VII – FIRST AID

Breathing (Inhalation):	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.
Swallowing (Ingestion):	Immediate first aid is not likely to be required. A physician or Poison Control Center can be contacted for advice.
Eyes:	Immediate first aid is not likely to be required. However, this material can be removed with water. Remove material from eyes.
Skin (Dermal):	Immediate first aid is not likely to be required. However, this material can be removed with water. Remove material from skin and clothing. Wash heavily contaminated clothing before reuse.

SECTION VIII – EMPLOYEE PROTECTION

Respiratory Protection:	Avoid breathing dust. Use NIOSH/MSHA approved respiratory protection equipment when airborne exposure limits (see OSHA PEL). Consult the respirator manufacturer to determine appropriate type equipment for a given application. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. Respiratory protection programs must comply with 29 C.F.R. 1910.134.
Eye Protection:	This product does not cause significant eye irritation or eye toxicity requiring special protetion. Use good industrial practice to avoid eye contact.
Protective Gloves:	Wearing protective gloves is recommended.
Protective Clothing:	Although this product does not present a significant skin concem, minimize skin contamination by following good industrial practice. Wash hands and contaminated skin thoroughly after handling.
Ventilation Requirements:	Provide natural or mechanical ventilation to control exposure levels below airbome exposure limits (see OSHA PEL). The use of local or mechanical exhaust ventilation is preferred at sources of air contamination such as open process equipment.

SECTION IX – SPILL AND DISPOSAL DATA

Spill:	In case of spill, sweep, scoop or vacuum and remove. If possible, complete cleanup on a dry basis. Flush residual spill area with water.
RCRA Status:	This material when discarded is not a hazardous waste as that term is defined by the Resource Conservation and Recovery Act (RCRA), 40 CFR 261. Dry material may be landfilled or recycled in accordance with local, state and federal regulations. Consult your attorney or appropriate regulatory officials for information on such disposal.

SECTION X – TRANSPORTATION DATA

DOT Shipping Name:	Industrial Process Compound, Water Treating, Dry
UN/NA Number:	None
Packaging Group:	None
Reportable Quantity:	NDA

SECTION XI – OTHER REGULATORY INFORMATION

TSCA Status:	Listed
SARA Secfion 302:	Section 302 Extremely Hazardous Substances: Not Applicable.
Sara Section 313:	Section 313 Toxic Chemical(s): Not Applicable
FDA:	Acceptable for use in food processing plants as determined in 21CFR Section 173.310, Food and Drug.
USDA:	Authorized by USDA for use in federally inspected meat and poultry plants.

HMIS Health:	1
HMIS Flammability:	0
HMIS Reactivity:	0
HMIS Personal Protection:	F

SECTION XII – HANDLING AND STORAGE

Storage Requirements:	Store in a cool, dry place to maintain product performance.
Handling Procedure:	Avoid breathing dust. Keep container closed. Use only with adequate ventilation. Emptied container retains product residue. Observe all labeled safegaurds until container is cleaned, reconditioned or desfroyed.

SECTION XIII – TOXICOLOGICAL AND ECOLOGICAL INFORMATION

Toxicity:	Data from Astaris single-dose (acute) animal studies with this material: Oral- Rat LD50- 5,400 mg/kg; practically non-toxic, Dermal- Rabbit LD50- >7,940 mg/kg; practically non-toxic, Eye Irritation- Rabbit-3.3/110.0; slightly irritating, Skin Irritation- Rabbit-0-0/8.0 (24-hr exp.); not irritating, Inhalation-LC50>0.39 mg/L (rat, 4 hr) (maximum attainable concentration)
Toxicity:	Rats fed Sodium Tripolyphosphate Anhydrous in their diet for two years exhibited decreased growth, increased kidney/body weight ratios, and kidney changes. No birth defects were noted in rabbits given Sodium Tripolyphosphate Anhydrous orally during pregnancy. No effects were seen on the ability of male and female rats to reproduce when fed Sodium Tripolyphosphate Anhydrous for 3 successive generations. Sodium Tripolyphosphate Anhydrous has generally produced no genetic changes in variety of standard tests using animals and animal or bacterial cells. Genetic changes were reported in a standard test using yeast cells.
Toxicity:	Acute studies indicate that this material is slightly toxic orally (rat) and practically nontoxic after skin application (rabbit). It is slightly irritating to rabbit eyes and nonirritating to rabbit skin. Rats fed tetrasodium pyrophosphate in their diet for four months showed a reduced weight gain, urinary changes, increased organ-to-body weight ratios, and slight kidney damage. No birth defects were reported in rabbits, hamsters, mice or rats given this material orally during pregnancy. Tetrasodium pyrophosphate produced no genetic changes in standard tests using bacterial and yeast cells.
Aquatic Toxicity Study:	The following data have been classified using the criteria adopted by the European Econocmic Community (EEC) for aquatic organism toxicity. Invertebrate: 48-hr EC50 Daphnia magna: > 1000 mg/L; Practically Nontoxic 96 hr. LC50 > 100mg/L, non-toxic (Rainbow trout, Inland silversides and mysid schrimp). [FMC 189-1081, 1082 & 1083] 48 hr. EC50 > 100 mg/L, non-toxic (Daphnia magna) [FMC 189-1084] Astaris has not conducted biodegradation studies with this

product since when dissolved/hydrolyzed in water it yields completely mineralized materials.

SECTION XIV – ADDITIONAL INFORMATION

Additional: This product is NOT listed in Proposition 65, California Safe Drinking Water and Toxic Enforcement Act of 1986.

ABBREVIATIONS

ACGIH=American Conference of Governmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
TLV=Threshold Limit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average
STEL=Short-Term Exposure Limit

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Material Safety Data Sheet
(BWTIAI) Sulfite

WELLONS
Water Technology
2525 W. Firestone Lane
Vancouver, Washington 98660

Emergency Phone Number:
(800) 535-5053

Date Prepared: February 27, 2004
Revision Date: August 24, 2006
INFOTRAC: 800-535-5053
Product Number: WBWTIAI-SF
Control Number:

SECTION I - IDENTIFICATION

Product Name:	BWTIAI
Synonyms:	Oxygen Scavenger; Boiler Water Treatment
Chemical Family:	Inorganic sodium compound
Formula:	Proprietary
Product Description:	Boiler Treatment

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredient	Percent	CAS Number	PEL
Sodium Sulfite	>99%	7757-83-7	2 mg/m^3 (SO_2)

SECTION III – PHYSICAL/CHEMICAL DATA

Form:	Powder Solid
Color:	White to Tan
Odor:	No appreciable odor
Boiling Point:	Not applicable
Freeze Point:	Not applicable
Melting Point:	Decomposes at 1112°F
Vapor Pressure:	No data available
Vapor Density (Air=1):	Not established
Specific Gravity:	NA
Density lb./gal (kg/L):	13.1 (NA)
pH(neat):	NA
pH(1% solution)	9.7 to 10.7
Solubility in Water:	27 gram sodium sulfite in 100 gram water (68°F)
Evaporation Rate:	Not applicable
Volatility including Water:	Not applicable

Molecular Weight: No data available

SECTION IV – FIRE AND EXPLOSION DATA

Flashpoint: Non combustible
Autoignltion: Neither flammable nor explosive
Flammable Limits: Not flammable
Lower Flammability Limit (In Air, %): .....None
Upper Flammability Limit (In Air, %):.....None
Explosion Limits: Neither reacfive nor explosive
Lower Explosion Limit (In Air, %): Neither reactive nor explosive
Upper Explosion Limit (In Air, %): Neither reactive nor explosive
Extinguishing Media: Non combustible. Employ extinguishing media appropriate to surrounding materials.
Hazardous Combustion Products: Generates hazardous sulfur dioxide during decomposition.
Special Fire Fighting Procedures: Wear NIOSH-approved self-contained breathing apparatus. Use water spray to keep containers cool and to knock down fumes.
Unusual Fire and Explosion Hazards:.....Non combustible. Generates hazardous sulfur dioxide during decomposition.

SECTION V – REACTIVITY DATA

Stability: Stable under normal conditions.
Hazardous Polymerization: Hazardous polymerization does not occur.
Incompatibility: Contact with strong oxidizers cause vigorous exothermic reactions. Contact with acids will release sulfur dioxide.
Hazardous Decomposition Products:.....Oxides of sulfur. Sulfur dioxide.

SECTION VI – HEALTH DATA

Tlueshold Liinit Value: 2 mg/m^3 (SO_2)
OSHA PEL: Nuisance dust should be maintained below a time weighted average of 5 mg/m^3.
Listed Carcinogen: This product contains no known or potential carcinogens
Medical Conditions Aggravated by Overexposure: .....Breathing of dust may aggravate asthma or other pulmonary conditions.
Inhalation: May cause irritation. Sulfite-sensitive individuals may experience a severe allergic reaction.
Ingestion: Oral exposure or swallowing may produce gastrointestinal upset, nausea, or vomiting. Ingestion may be fatal. Sulfite-sensitive individuals may experience a severe allergic reaction.
Eyes: May cause slight irritation.
Skin (Dermal): May cause slight irritation.

Material Safety Data Sheet
(BWTIAI)

SECTION VII – FIRST AID

Breathing (Inhalation):	Immediate first aid is not likely to be required. If irritation occurs, remove to fresh air. Immediately remove material from eyes, skin and clothing.
Swallowing (Ingestion):	Never give anything by mouth to an unconscious person. Remove any traces of the substance from the patient's mouth. If the patient is conscious and alert, give 8-12 ounces of water and seek medical attention.
Eyes:	Remove contact lenses. Gently flush the eyes and surrounding areas, including under the eyelids, with lukewarm water for 15 minutes. If irritation persists, seek medical attention.
Skin (Dermal):	Remove contaminated clothing. Wipe material from the skin. Rinse the affected area with large amounts of water for 15 minutes. If irritation persists, seek medical attention.

SECTION VIII – EMPLOYEE PROTECTION

Respiratory Protection:	In case of significant or accidental dust emissions, a NIOSH/MSHA approved respirator should be worn. If SO_2 is present, use a NIOSH-approved air supplied positive pressure or acid gas canister.
Eye Protection:	Wear chemical goggles.
Protective Gloves:	Cotton gloves are adequate for routine handling of the product. For solufions, wear impervious gloves.
Protective Clothing:	Boots, apron, long sleeves.
Ventilation Requirements:	Adequate ventilation must be provided to maintain air concentration below the OSHA PEL.
Work/Hygiene Practices:	An emergency eye wash and safety shower for first aid treatment of potential chemical bums should be available in the vicinity of exposure from any material release. Avoid contact with the skin, and breathing vapor, mists, or dusts. Do not eat, drink or smoke in the work area. Wash hands thoroughly before eating, drinking, smoking, chewing, or using the restroom facility.

SECTION IX – SPILL AND DISPOSAL DATA

Spill:	Shovel back into the original, dry uncontaminated container or waste receptacle. Flush area with water; contain the run-off; dispose waste in accordance with applicable laws and regulations.
Waste Disposal:	Dispose of in accordance with all federal, state, and local environmental laws and regulations.
RCRA Status:	Not listed

Material Safety Data Sheet
(BWTIAI)

SECTION X – TRANSPORTATION DATA

DOT Shipping Name:	Industrial Process Compound, Water Treating, Dry
DOT Hazard Label(s):	None; Not regulated for transport
DOT Hazard Placard(s):	None; Not regulated for transport
DOT Hazard Class:	Flammable
UN/NA Number:	None
Packaging Group:	None
Reportable Quantity:	Not Est

SECTION XI – OTHER REGULATORY INFORMATION

TSCA Status:	All components listed in TSCA inventory.
SARA Section 302:	Reportable quantity of extremely hazardous substance: not listed. Threshold planning quantity, extremely hazardous substance: not listed.
SARA Section 311:	Contains no substances listed as toxic.
SARA Section 312:	Contains no substances listed as toxic.
Sara Section 313:	Not regulated
Clean Air Act:	Not Listed
FDA:	Acceptable for use in food processing plants as determined in 21CFR Section 173.310, Food and Drug.
USDA:	Not acceptable for use by USDA in federally inspected meat and poultry plants.
HMIS Health:	2
HMIS Flammability:	0
HMIS Reactivity:	1
HMIS Personal Protection:	E

SECTION XII – HANDLING AND STORAGE

Storage Requirements:	Keep in a closed, properly labeled container in a dry area away from acids. Protect from damage.
Handling Procedure:	Avoid prolonged or repeated contact with the skin or eyes.
Conditions to avoid:	High temperatures. Moisture.

SECTION XIII – TOXICOLOGICAL AND ECOLOGICAL INFORMATION

Toxicity:	LD_{50}-oral 820 mg/kg species: mouse
Toxicity:	Chronic toxicity: Can cause allergic reactions (headaches, difficulty in breathing, rapid heart rate and anaphylaxis) to susceptible individuals after repeated contact.
Aquatic Toxicity Study:	96 hour LC_{50} goldtish: 100 mg/L
Aquatic Toxicity Study:	24, 48, 96 hour TLm, mosquito fish: 2600 ppm

BOD:	Biological Oxygen Demand = 0.12 lb./lb. instantaneous. Sodium sulfite is an oxygen scavenger when introduced to water.
COD:	No data available

SECTION XIV – ADDITIONAL INFORMATION

Additional:	The national Science Foundation recommends that the maximum usage level is 22 mg/l for potable water treatment, unless usage is for ozone reduction. The residual sodium sulfite levels shall not exceed 100 ppb in the finished water.

ABBREVIATIONS

ACGIH=American Conference of Govemmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
TLV=Threshold Limit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average
STEL=Short-Term Exposure Limit

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Material Safety Data Sheet
(BWT7AD)

WELLONS
Water Technology
2525 W. Firestone Lane
Vancouver, Washington 98660

Emergency Phone Number:
(800) 535-5053

Date Prepared: March 11, 2004
Revision Date: March 9, 2005
INFOTRAC: 800-535-5053
Product Number: WBWT7AD-SF
Control Number:

SECTION I - IDENTIFICATION

Product Name:	BWT7AD
Synonyms:	Boiler Water Alkalinity Builder
Chemical Family:	Caustic Alkali
Formula:	Proprietary
Product Description:	Boiler Treatment

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredient	Percent	CAS Number	PEL
Sodium Hydroxide	25-50%	1310-73-2	2 mg/M^3 TWA

SECTION III – PHYSICAL/CHEMICAL DATA

Form:	Liquid
Color:	Colorless
Odor:	No appreciable odor
Boiling Point:	No data available
Freeze Point:	No data available
Melting Point:	Not established
Vapor Density (Air=1):	Not established
Specific Gravity:	1.478
Density lb./gal (kg/L):	12.3 (1.48)
pH(neat):	> 13
pH(1% solution)	> 13
Solubility in Water:	100%
Evaporation Rate:	Not applicable
Volatility including Water:	Not established
Molecular Weight:	Blend, not applicable

SECTION IV – FIRE AND EXPLOSION DATA

Flashpoint:	Neither flammable nor explosive
Autoignition:	Neither flammable nor explosive
Flammable Limits:	Neither flammable nor explosive
Lower Flammability Limit (In Air, %):	Neither flammable nor explosive
Upper Flammability Limit (In Air, %):	Neither flammable nor explosive
Explosion Limits:	Neither flammable nor explosive
Lower Explosion Limit (In Air, %):	Neither flammable nor explosive
Upper Explosion Limit (In Air, %):	Neither flammable nor explosive
Extinguishing Media:	Water fog or spray, Foam, Dry Powder, Carbon Dioxide (CO2).
Hazardous Combustion Products:	No data available
Special Fire Fighting Procedures:	Not flammable. Cool exposed tanks with water to prevent mpture. Wear protective clothing including full face protection, mbber gloves, rubber boots and rubber rain gear.
Unusual Fire and Explosion Hazards:	Direct contact with water can cause a violent exothermic reaction. It reacts violently with acids or organic halogen compounds, and metals such as zinc, tin, and aluminum giving off highly flammable and explosive hydrogen gas.

SECTION V – REACTIVITY DATA

Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Hazardous Decomposition Products:	None known

SECTION VI – HEALTH DATA

Threshold Limit Value:	2 mg/M^3
OSHA PEL:	2.0 mg/M^3 TWA
Listed Carcinogen:	This product contains no known or suspected carcinogens.
Medical Conditions Aggravated by Overexposure:	Human Dermal Exposure: regardless of concentrations, the severity of damage and the extent of its irreversibility increases with the length of contact time. Prolonged contact with sodium hydroxide solutions of greater than 1% concenfration can cause a high degree of tissue destmction. The latent period, following skin contact during which no sensation of irtitation occurs, varies from several hours for a 0.4 to 4.0% active solution to 3 minutes for concentrations of 25% or higher.
Inhalation:	Breathing mist or spray may cause damage to the upper respiratory tract and lung tissue.
Ingestion:	Causes severe bums to mucous membranes of the mouth, throat, esophagus, and stomach.
Eyes:	Causes eye bums
Skin (Dermal):	Causes severe bums with deep ulceration.

SECTION VII – FIRST AID

Breathing (Inhalation):	Imunediate first aid is not likely to be required. If irritation occurs, remove to tresh air. Immediately remove material trom eyes, skin and clothing.
Swallowing (Ingestion):	If person is conscious, give large quantities of water to drink. Do not induce vomiting. Call a physician.
Eyes:	Immediately flush with copious amounts of water for at least 15 minutes, seek medical attention.
Skin (Dermal):	Immediately wash the affected area with soap and water as a precaution. Get medical if skin irritation persists.
Note to Physician:	Treat symptomatically and supportively.

SECTION VIII – EMPLOYEE PROTECTION

Respiratory Protection:	NIOSH approved respirator
Eye Protection:	Chemical goggles, faceshield
Protective Gloves:	Neoprene, mbber, or PVC gloves with gauntlets.
Protective Clothing:	Neoprene, mbber or PVC boots and rain suit.
Ventilation Requirements:	Adequate ventilation must be provided to maintain air concentration below the OSHA PEL.
Work/Hygiene Practices:	Emergency eye wash and safety showers for tirst aid treatment of potential chemical bums should be available in the vicinity of signiticant exposure trom caustic release. Avoid contact with skin and breathing vapor. Do not eat, drink, or smoke in the work area. Wash hands thoroughly after handling, especially before eating, drinking, smoking, chewing, or using restroom facility.

SECTION IX – SPILL AND DISPOSAL DATA

Spill:	Stop the source of the leak. Contain the spilled material with dikes, sandbags, and prevent mn-off into surface waters or sewers. Clean or recover as much material as possible by using a vacuum or pump. Neutralize any remaining traces of material with any dilute inorganic acid such as hydrochloric, sulfuric, phosphoric, or acetic acid. The spill area should then be flushed with water followed by covering with sodium bicarbonate. Spills on dirt or sandy ground may be handled by removing the affected soils and placing them in approved containers. All clean-up material should be placed in approved containers, labeled and stored in a safe place prior to treatment or disposal. Caution: strong alkaline solutions may react violently with acids and water.
Waste Disposal:	Hazardous Waste. Follow Federal and State Regulations.
RCRA Status:	If disposed of in its purchased form, this product will have a RCRA hazardous waste D002 by characteristic. Under RCRA, it is the responsibility of the product user to determine at the time of disposal

whether a material containing the product or derived from the product should be classitied as a hazardous waste (40 CFR 261.20-24).

SECTION X – TRANSPORTATION DATA

DOT Shipping Name:	Corrosive Liquids, n.o.s. (Contains Sodium Hydroxide), 8, UN1760, PGIII
DOT Hazard Label(s):	Corrosive
DOT Hazard Placard(s):	Corrosive
DOT Hazard Class:	8
UN/NA Number:	UN1760
Packaging Group:	III
Reportable Quantity:	1000 lb.

Emergency Response Guide Number: 154

SECTION XI – OTHER REGULATORY INFORMATION

TSCA Status:	All components listed in TSCA inventory.
SARA Section 302:	Reportable quantity of exfremely hazardous substance: not listed. Threshold planning quantity, extremely hazardous substance: not listed.
SARA Section 311:	Acute Health Hazard; Reactive Hazard.
SARA Section 312:	Acute Health Hazard; Reactive Hazard
Sara Section 313:	Category as required by Sec. 313 (40 CFR 372.65C). Must be used on Toxic Release Inventory Form: Yes
Clean Air Act:	Not Listed
FDA:	Acceptable for use in food processing plants as determined in 21CFR Section 173.310, Food and Drug.
USDA:	Authorized by USDA for use in federally inspected meat and poultry plants.
HMIS Health:	3
HMIS Flammability:	0
HMIS Reactivity:	2
HMIS Personal Protection:	D

SECTION XII – HANDLING AND STORAGE

Storage Requirements:	Store in closed, properly labeled tanks or containers.
Handling Procedure:	Wear the proper personal protection equipment. This product may be added slowly to water or acids with dilution and constant stirring to avoid a violent exothermic reaction. Full protective clothing should be worn. Avoid contact with aluminum, tin, zinc, and alloys containing these metals. Do not mix with strong acids without dilution and agitation to prevent violent or explosive reaction.
Conditions to avoid:	Avoid contact with leather, wool, acids, organic halogen compounds, nitro compounds, or metals such as aluminum, tin or zinc.

SECTION XIII – TOXICOLOGICAL AND ECOLOGICAL INFORMATION

Toxicity:	Sodium Hydroxide: Oral LD50 rat 140 to 340 mg/kg
Toxicity:	Sodium Hydroxide: Acute dermal LD50 rabbit: 1350 mg/kg
Aquatic Toxicity Study:	No data available
BOD:	No data available
COD:	No data available

SECTION XIV – ADDITIONAL INFORMATION

Additional:	This product is NOT listed in Proposition 65, California Safe Drinking Water and Toxic Enforcement Act of 1986.

ABBREVIATIONS

ACGIH=American Conference of Governmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
TLV=Threshold Limit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average
STEL=Short-Term Exposure Limit

This information is furnished without warranty, expressed or implied, except it is accurate to the best knowledge of Wellons Water Technology. Neither Wellons Water Technology nor any of its distributors assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist. Wellons Water Technology assumes no legal responsibility for loss, damage, or expense arising out of, or in any way connected with, the handling, storage, use or disposal of this product.

Material Safety Data Sheet
(CRT1AF)

WELLONS
Water Technology

2525 W. Firestone Lane
Vancouver, Washington 98660

Emergency Phone Number:
(800) 535-5053

Date Prepared: March 12, 2004
Revision Date: March 23, 2005
INFOTRAC: 800-535-5053
Product Number: WCRT1AF-SF
Control Number:

SECTION I - IDENTIFICATION

Product Name:	CRT1AF
Synonyms:	None
Chemical Family:	Neutralizing Amine
Formula:	Proprietary
Product Description:	Condensate Treatment

SECTION II - HAZARDOUS INGREDIENTS

Hazardous Ingredient	Percent	CAS Number	PEL
Cyclohexylamine	10-20%	108-91-8	10 mg/m^3
Morpholine	10-20%	110-91-8	20 mg/ m^3

SECTION III – PHYSICAL/CHEMICAL DATA

Form:	Liquid
Color:	Colorless
Odor:	Amine
Boiling Point:	>212 °F
Freeze Point:	~32 °F
Vapor Pressure:	No data available
Vapor Density (Air=1):	3.42
Specific Gravity:	0.997
Density lb./gal (kg/L):	8.32 (1.00)
pH(neat):	12.0 to 13.0
pH(1% solution)	10.8 to 11.8
Solubility in Water:	complete
Volatility including Water:	100%
Molecular Weight:	Blend, not applicable

SECTION IV – FIRE AND EXPLOSION DATA

Flashpoint:	Not established
Autoignition:	Not Established
Lower Flammability Limit (In Air, %):	Not Established
Upper Flammability Limit (In Air, %):	Not Established
Extinguishing Media:	Water fog or spray, Foam, Dry Powder, Carbon Dioxide (CO2).
Special Fire Fighting Procedures:	Wear NIOSH-approved self-contained breathing apparatus. Use water spray to keep containers cool and to knock down fumes.
Unusual Fire and Explosion Hazards:	Dangerous when exposed to heat or flames. Can react with oxidizing materials. Emits toxic gases when heated to decomposition.

SECTION V – REACTIVITY DATA

Stability:	Stable under normal conditions.
Hazardous Polymerization:	Hazardous polymerization does not occur.
Incompatibility:	Mineral Acids
Hazardous Decomposition Products:	Carbon dioxide and carbon monoxide; Oxides of Nitrogen

SECTION VI – HEALTH DATA

Threshold Limit Value:	10 mg/m^3 (as cyclohexylamine)
OSHA PEL:	10 mg/m^3 (as cyclohexylamine)
Listed Carcinogen:	This product contains no known or suspected carcinogens.
Medical Conditions Aggravated by Overexposure:	Acute Overexposure Effects: This material is corrosive to the body tissues. Skin contact with the liquid or vapors/mists may result in dermatitis and deep burns. Eye contact may result in burns or permanent injury. Inhalation of cyclohexylamine vapors may result in irritation, light-headedness, drowsiness, anxiety, nausea, and vomiting. Cyclohexylamine can be skin absorbed in toxic amounts. Repeated skin exposure may result in sensitization. Chronic Overexposure Effects: Cyclohexylamine has produced embryotoxicity, low birth count, post-natal mortality, and decreased body weight in laboratory animals at high doses. Cyclohexylamine hydrochloride was administered in the diet to mice and rats for 13 weeks, at 400 mg/kg/day. After 7 and 13 weeks, rats exhibited testicular atrophy; mice showed no evidence of testicular damage. Repeated inhalation exposures up to 700 mg/m^3 have been known to produce.effects on the lungs and kidneys in experimental animals.
Inhalation:	Breathing mist or spray may cause damage to the upper respiratory tract and lung tissue.
Ingestion:	Causes severe burns to mucous membranes of the mouth, throat, esophagus, and stomach.
Eyes:	Causes eye burns

Skin (Dermal):	Causes severe burns with deep ulceration.

SECTION VII – FIRST AID

Breathing (Inhalation):	Move to fresh air. If breathing is irregular or stopped, administer artitiicial respiration. Immediate medical attention is required.
Swallowing (Ingestion):	Clean mouth with water, and afterwards drink plenty of water. If swallowed, seek medical advice immediately and show the doctor the container, label, or msds. Do not induce vomiting. Never give anything by mouth to an imconscious person. If a person vomits while lying on his back, place him in the recovery position.
Eyes:	Remove contact lenses. Gentiy flush the eyes and surrounding areas, including under the eyelids, with lukewarm water for 15 minutes. If irritation persists, seek medical attention.
Skin (Dermal):	Immediately wash the affected area with soap and water as a precaution. Get medical if skin irritation persists.

SECTION VIII – EMPLOYEE PROTECTION

Respiratory Protection:	NIOSH approved organic vapor mask
Eye Protection:	Chemical goggles. Always be aware of proximity of eye wash station.
Protective Gloves:	Neoprene, rnbber, or PVC gloves with gauntlets.
Protective Clothing:	Neoprene, rnbber or PVC boots and rain suit.
Ventilation Requirements:	Adequate ventilation must be provided to maintain air concentration below the OSHA PEL.
Work/Hygiene Practices:	An emergency eye wash and safety shower for first aid treatment of potential chemical burns should be available in the vicinity of exposure from any material release. Avoid contact with the skin, and breathing vapor, mists, or dusts. Do not eat, drink or smoke in the work area. Wash hands thoroughly before eating, drinking, smoking, chewing, or using the restroom facility.
Additional Measures:	None known.

SECTION IX – SPILL AND DISPOSAL DATA

Spill:	Stop the source of the leak. Contain the spilled material with dikes, sandbags, and prevent run-off into surface waters or sewers. Clean or recover as much material as possible by using a vacuum or pump. Neutralize any remaining traces of material with any dilute inorganic acid such as hydrochloric, sulfuric, phosphoric, or acetic acid. The spill area should then be flushed with water followed by covering with sodium bicarbonate. Spills on dirt or sandy ground may be handled by removing the affected soils and placing them in approved containers. All clean-up material should be placed in approved containers, labeled and stored in a safe place prior to treatment or disposal. Caution: strong alkaline solutions may react violently with acids and water.
Waste Disposal:	Hazardous Waste. Follow Federal and State Regulations.

RCRA Status: No data available

SECTION X – TRANSPORTATION DATA

DOT Shipping Name:	Corrosive Liquids, n.o.s., (Contains Cyclohexylamine and Morpholine), 8, UN1760, PGIII
DOT Hazard Label(s):	Corrosive
DOT Hazard Placard(s):	Corrosive
DOT Hazard Class:	8
UN/NA Number:	UN1760,
Packaging Group:	III
Reportable Quantity:	Not Est.

Emergency Response Guide Number: .....Unknown

SECTION XI – OTHER REGULATORY INFORMATION

TSCA Status:	All components listed in TSCA inventory.
SARA Section 302:	No data available
SARA Section 311:	No Data Available
SARA Section 312:	No data available
Sara Section 313:	Not listed, No Threshold Amount
Clean Air Act:	No data available
FDA:	Acceptable for use in food processing plants as determined in 21CFR Section 173.310, Food and Drug.
USDA:	Authorized by USDA for use in federally inspected meat and poultry plants.
HMIS Health:	3
HMIS Flammability:	2
HMIS Reactivity:	0
HMIS Personal Protection:	H

SECTION XII – HANDLING AND STORAGE

Storage Requirements:	Store in closed, properly labeled tanks or containers.
Handling Procedure:	Store in a cool place away from ignition sources.
Conditions to avoid:	Avoid extreme temperatures. Protect from freezing.

SECTION XIII – TOXICOLOGICAL AND ECOLOGICAL INFORMATION

Toxicity:	Oral LD50, Rat - 300 mg/kg; very toxic (as cyclohexylamine)
Toxicity:	Dermal LD50, Rabbit - 280 mg/kg; moderately toxic (as cyclohexylamine)
Toxicity:	Primary Skin Irritation - Rabbit; Corrosive (as cyclohexylamine)

Aquatic Toxicity Study:	Golden Orfe, static 96 hour LC_{50} - 58 to 195 mg/l; practically non toxic (as cyclohexylamine)
Aquatic Toxicity Study:	Daphnia Magna, 24 hr EC/LC_{50} - 49 to 80 mg/l; slightly toxic (as cyclohexylamine)
Aquatic Toxicity Study:	Algal, 96 hour EC_{50} - 20 mg/l; slightly toxic (as cyclohexylamine)
BOD:	Biological Oxygen Demand, 5 day - 1880 mg O_2/g (as cyclohexylamine)
COD:	No data available (as cyclohexylamine)

SECTION XIV – ADDITIONAL INFORMATION

Additional:	This product is NOT listed in Proposition 65, California Safe Drinking Water and Toxic Enforcement Act of 1986.

ABBREVIATIONS

ACGIH=American Conference of Governmental Industrial Hygienists
OSHA=Occupational Safety and Health Administration
TLV=Threshold Limit Value
PEL=Permissible Exposure Limit
TWA=Time Weighted Average
STEL=Short-Term Exposure Limit

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MATERIAL SAFETY DATA SHEET: CONQUEST

(000000-000000- -0638)

DATE OF ISSUE 8/16/2001

SUPERSEDES 5/22/1997

SECTION I - GENERAL INFORMATION

Chemical Name & Synonyms

Trade Name & Synonyms
CONQUEST

Chemical Family:
ACIDIC-LATEX MIXTURE

Formula Mixture --> X

Manufacturer's Name:
CHEMSEARCH DIV. OF HCH CORP.

Address:
BOX 152170
IRVING, TX 75015

Prepared By:
C Williamson/Chemist

Product Code Number
0638

Emergency Phone Number
800-424-9300

SECTION II - HAZARDOUS INGREDIENTS
THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

Chemical Name (Ingredients)	Hazard	TLV	PEL	STEL	CAS #
TANNIC ACID	IRRITANT	NOT EST. 1	NOT EST. 2	NOT EST.	1401-55-4
DIPROPYLENE GLYCOL METHYL ETHER	IRRITANT	100 PPM 1	100 PPM 2	150 PPM 3	34590-94-8
VINYL ACRYLIC COPOLYMER EMULSION	IRRITANT	NOT EST. 1	NOT EST. 2	NOT EST.	TRADE SECRET
AMORPHOUS SILICON DIOXIDE	IRRITANT	10 MG/M3 1	27 MG/M3 2	NOT EST.	12926-00-8

SECTION III - PHYSICAL DATA

Boiling Point (F):	180	Specific Gravity (H20=1):	1.229
Vapor Pressure (MM HG):	<18	Color:	OFF-WHITE TO TAN
Vapor Density (Air=1):	0.1	Odor:	MILD
PH @ 100% :	1.3	Clarity:	OPAQUE
Volatile by Volume:	52	Evaporation Rate (BU A/C=1):	0.1
H2O Solubility:	COMPLETE	Viscosity:	SEMI-VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

Flash Point	Flammable Limits	LEL	UEL
>200°F / SETAFLASH	N/A	N/A	N/A

Extinguishing Media
X <--Foam X <--Alcohol Foam X <--CO2 X <--Dry Chemical X <--Water Spray X <--Other

Special Fire Fighting Procedures:
FIREFIGHTERS SHOULD WEAR A SELF CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE GEAR. EXTINGUISHING MEDIA SHOULD BE CHOSEN BASED ON THE NATURE OF THE SURROUNDING FIRE.

Unusual Fire and Explosion Hazards:
USE CARE AS SPILLS MAY BE SLIPPERY.

Aerosol Level (NFPA 30B): N/A

NFPA 704 Hazard Rating (0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme)
2 <--Health 1 <--Flammability 0 <--Instability <--Special

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value:
NOT ESTABLISHED FOR MIXTURE. SEE SECTION II.

Effects of Overexposure:

-Acute (Short Term Exposure)

INHALATION: MIST CAUSES IRRITATION OF THE RESPIRATORY TRACT SEEN AS COUGHING AND SNEEZING. EXCESSIVE EXPOSURE TO VAPORS MAY CAUSE DIZZINESS OR DROWSINESS. SKIN CONTACT: CAUSES SKIN DISCOLORATION AND IRRITATION SEEN AS ITCHING OR REDNESS. PRODUCT MAY BE ABSORBED THROUGH THE SKIN IN HARMFUL AMOUNTS. EYE CONTACT: CAUSES IRRITATION SEEN AS TEARING, REDNESS OR A BURNING SENSATION. INGESTION: CAUSES IRRITATION WITH POSSIBLE NAUSEA, VOMITING AND DIARRHEA.

-Chronic (Long Term Exposure)

PRODUCT MAY BE ABSORBED THROUGH THE SKIN IN HARMFUL AMOUNTS. EXCESSIVE INHALATION OF VAPORS MAY CAUSE DIZZINESS OR DROWSINESS. TARGET ORGANS: CENTRAL NOUS SYSTEM, LIVER AND KIDNEYS. MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE ARE PRE-EXISTING RESPIRATORY AND SKIN CONDITIONS SUCH AS ASTHMA, EMPHYSEMA, AND DERMATITIS.

Primary Routes of Entry: <--Inhalation <--Ingestion X <--Absorption

Emergency and First Aid Procedures:

-Inhalation:

REMOVE FROM THE AREA TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

-Eye Contact:

SECTION V - HEALTH HAZARD DATA (Continued)

RINSE THE EYES WITH WATER. REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING WITH PLENTY OF WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

-Skin Contact:
WASH AFFECTED AREAS WITH PLENTY OF SOAP AND WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

-Ingestion:
GIVE 3 TO 4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. SEEK MEDICAL ATTENTIOH IF DISCOMFORT OCCURS.

-Notes to Physician:
THERE IS NO SPECIFIC ANTIDOTE. TREAT THE PATIENT SYMPTOMATICALLY.

SECTION VI - TOXICITY INFORMATION

Product Contains Chemicals Listed as Carcinogen or Potential Carcinogen By:
IARC--> No NTP--> No OSHA--> No ACGIH--> Ho OTHER--> Yes

TANNIC ACID
ORL-RAT LD50: 2260 MG/KG 3.
ORL-RAT LDLo: 2 MG/KG 3.
SCU-RAT TDLo: 4450 MG/KG /17W-I 3.
SCU-MUS TDLo: 750 MG/KG/12W-I 3.
POSSIBLE CARCINOGEN.
IARC: NOT CLASSIFIABLE AS HUMAN CARCINOGEN (GROUP 3)
THERE IS NO ADEQUATE DATA FOR HUMAN EVIDENCE. AHIMAL EVIDENCE IS LIMITED

DIPROPYLENE GLYCOL MOHOMETHYL ETHER
EYE-RBT: 500 MG/24H MILD 3.
OPL-RAT LD50: 5400 uL/KG 3.
ORL-DOG LD50: 7500 MG/KG 3.
SKN-RBT LD50: 10 mL/KG 3.
SKN-RBT: 500 MG MIID 3.

AMORPHOUS SILICOH DIOXIDE
ORL-HMN LD: > 15000 MG/KG 4.

VINYL ACRYLIC COPOLYMER EMULSION
ORL-RAT LD50: >10 ML/KG 4.
EYE-RBT: SLIGHT IRRITATION 4.
SKN-RAT: SLIGHT TO MODERATE IRRITATION ON REPEATED APPLICATION 4.

VOC COHTENT: 18 G/L (0.15 LE/GAL)

SECTION VII - REACTIVITY DATA

Stability: X <--Stable <--Unstable
Conditions to Avoid:
AVOID HEAT, HOT SURFACES, SPARKS AND OPEN FLAMES.

Incompatibility (Materials to Avoid):
STRONG OXIDIZING ACENTS SUCH AS CHLORINE BLEACH AND CONCENTRATED HYDROGEN PEROXIDE: ALKALIES, REDUCING AGENTS AND HYDROFLUORIC ACID.

Hazardous Decomposition Products:
OXIDES OF CARBON.

Hazardous Polymerization: <--May Occur X <--Will Not Occur
Conditions to Avoid:
N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled:
WEAR APPROPRIATE PROTECTIVE CLOTHING. USE CARE AS SPILLS MAY BE SLIPPERY. VENTILATE THE AREA. DIKE AND CONTAIN SPILL. ABSORB WITH AN INERT MATERIAL AND TRANSFER ALL MATERIAL INTO A PROPERLY LABELED CONTAINER FOR DISPOSAL. PREVENT PRODUCT FROM CONTAMINATING SOIL OR FROM ENTERING SEWAGE AND DRAINAGE SYSTEMS AND BODIES OF WATER. FLUSH AREA WITH WATER.

Waste Disposal Method(s):
DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

Neutralizing Agent:
USE SODIUM BICARBONATE OR SODA ASH. ADD CAUTIOUSLY WHILE MIXING. WEAR APPROPRIATE PROTECTIVE EQUIPMENT.

SECTION IX - SPECIAL PROTECTION INFORMATION

Required Ventilation:
GENERAL MECHANICAL VENTILATION IS NORMALLY ADEQUATE.

Respiratory Protection:
NONE REQUIRED UNDER NORMAL CONDITIONS OF USE. A NIOSH/MSHA APPROVED RESPIRATOR FOR EXPOSURE ABOVE THE ACGIH TLV OR OSHA PEL OR WHERE MISTING EXISTS.

Glove Protection:
NEOPRENE OR NITRILE RUBBER GLOVES WHEN HANDLING.

Eye Protection:
SAFETY GLASSES WITH SIDE SHIELDS IF THE METHOD OF USE PRESENTS THE LIKELIHOOD OF EYE CONTACT.

Other Protection:
WEAR GENERAL DUTY WORK CLOTHING AND SHOES.

SECTION IX - SPECIAL PROTECTION INFORMATION (Continued)

SECTION X - STORAGE AND HANDLING INFORMATION

orage Temperature: Indoors--> X Outdoors--> Heated--> Refrigerated-->
imum Temperature: 35°F Maximum Temperature: 120°F

Precautions to be Taken in Handling and Storing:
ALWAYS STORE MATERIAL IN ITS ORIGINAL CONTAINER. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. KEEP FROM FREEZING. IF PRODUCT FREEZES ALLOW IT TO SLOWLY WARM TO ROOM TEMPERATURE AND STIR THOROUGHLY BEFORE USING.

Other Precautions:
KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL DIRECTIONS. WEAR GLOVES WHEN HANDLING AS THIS PRODUCT MAY DISCOLOR SKIN.

SECTION XI - REGULATORY INFORMATION

Chemical Name	CAS Number	Upper % Limit
GLYCOL ETHERS	N/A	5

Those ingredients listed above are subject to the reporting requirements of 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Please call 1-800-527-9919 for additional information if you are a California customer.
This MSDS is not intended for users in the state of California.

SECTION XII - REFERENCES

1. THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH. 2001.
2. OSHA PEL.
3. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, CCINFODisc, 2001.
4. VENDOR'S MSDS.
ALL COMPONENTS IN THIS PRODUCT CAN BE FOUND IN THE CURRENT TSCA INVENTORY.

IRR:IRRITANT, FLAM/FLAMM:FLAMMABLE, COMB:COMBUSTIBLE.
CORR:CORROSIVE CARC:CARCINOGENIC, TOX:TOXIC, N/A:NOT APPLICABLE, N/E:NOT ESTABLISHED, COC:CLEVELAND OPEN CUP, PMCC:PENSKY-MARTIN CLOSED CUP, TCC:TAGLIABUE CLOSED CUP, LEL:LOWER EXPLOSION LIMIT, UEL:UPPER EXPLOSION LIMIT, NFPA:NATIONAL FIRE PROTECTION ASSOCIATION, IARC:INTERNATIONAL AGENCY FOR THE RESEARCH ON CANCER, NTP:NATIONAL TOXICOLOGY PROGRAM, OSHA:OCCUPATIOHAL SAFETY & HEALTH ADMINISTRATION, ACGIH:AMERICAN CONFERENCE OF GOVERNMEHTAL INDUSTRIAL HYGIENISTS, TLV:THRESHOLD LIMIT VALUE, PEL:PERMISSIBLE EXPOSURE LIMIT, STEL:SHORT-TERM EXPOSURE LIMIT, MLD:MILD, MOD:MODERATE, SEV:SEVERE, MUT:MUTAGENIC, ASPHYX:ASPHYXIANT, PNOS: PARTICULATES (INSOLUBLE) NOT OTHERWISE SPECIFIED, SDT:STANDARD DRAIZE TEST, ORL: ORAL, HMN: HUMAN, IHL:INHALATION

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

ISEARCH DIV. OF NCH CORP. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in manner not recommended on the product label. Users assume all risks associated with such unrecommended use, storage, or disposal of the product.

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: ULTRA LOW SULFUR DIESEL
Product Description: Hydrocarbons and Additives
Product Code: 152017-00, 97AJ39, 97AV80, 97Y564
Intended Use: Diesel engine fuel

COMPANY IDENTIFICATION

Supplier: EXXON MOBIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency	609-737-4411
Transportation Emergency Phone	800-424-9300
ExxonMobil Transportation No.	281-834-3296
MSDS Requests	713-613-3661
Product Technical Information	800-662-4525, 800-947-9147
MSDS Internet Address	http://www.exxon.com, http://www.mobil.com

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
FUELS, DIESEL	68334-30-5	> 99%

Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration*
ETHYL BENZENE	100-41-4	0.1 - 1%
NAPHTHALENE	91-20-3	0.1 - 1%

* All concentrations are percent by weight unless material is a gas Gas concentrations are in percent by volume.

NOTE: Composition may contain up to 0.5% performance additives and / or dyes.

SECTION 3 HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Combustible. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

Combustible. Material can accumulate static charges which may cause an incendiary electrical discharge.

PRECAUTIONS
Avoid contact with skin. Do not siphon by mouth. Use proper bonding and/or grounding procedures.

FIRST AID
Eye: Flush thoroughly with water. If irritation occurs, get medical assistance.

Oral: Seek immediate medical attention. Do not induce vomiting.

Skin: Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

FIRE FIGHTING MEDIA
Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

SPILL/LEAK
Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of Califomia to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent runoff from fire control or dilution from entehng streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Sulfur oxides, Oxides of carbon, Incomplete combustion products. Smoke, Fume, Aldehydes

FLAMMABILITY PROPERTIES

Flash Point [Method]: >55C (131F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.6 UEL: 7.0
Autoignition Temperature: >200°C (392°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

Water Spill: Stop leak if you can do it without risk. Eliminate sources of ignition. If the Flash Point exceeds the Ambient Temperature by 10 degrees C or more, use containment booms and remove

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
NAPHTHALENE	91-20-3	0.1 - 1%
ETHYL BENZENE	100-41-4	0.1 - 1%

The Following ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	1, 4, 10
FUELS, DIESEL	68334-30-5	1, 18, 19
NAPHTHALENE	91-20-3	1, 4, 5, 10

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:
No revision information is available.
THIS MSDS COVERS THE FOLLOWING MATERIALS: DIESEL NO. 2 | ESSO DIESEL FUEL | EXXON DIESEL FUEL | LOW SULFUR DIESEL | MARINE DIESEL FUEL | MOBIL DIESEL FUEL | ULTRA LOW SULFUR DIESEL | WINTERIZED DIESEL FUEL

PRECAUTIONARY LABEL TEXT:
Contains: DIESEL FUEL
WARNING!
HEALTH HAZARDS
Repeated exposure may cause skin dryness or cracking. Possible human cancer hazard. If swallowed, may be aspirated and cause lung damage.
Target Organs: Lung | Skin |

PHYSICAL HAZARDS

TOTAL HYDROCARBONS	Stable Aerosol.	TWA	5 mg/m3		N/A	ExxonMobil
TOTAL HYDROCARBONS	Total vapor and aerosol.	TWA	500 mg/m3	100 ppm	N/A	ExxonMobil

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly affect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

Chemical resistant gloves are recommended. If contact with forearms is likely wear gauntlet style gloves.

Eye Protection: If contact with material is likely, chemical goggles are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

Chemical/oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9 PHYSICAL AND CHEMICAL PRORERTIES

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.
High molecular wt. component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Material -- Expected to be inherently biodegradable

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY.

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

	lungs. Based on test data for structurally similar materials.
ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	May dry the skin leading to discomfort and dermatitis. Based on test data for structurally similar materials.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Sensitization: Non-sensitizing to the skin of laboratory animals.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Diesel fuel: Caused cancer in animal tests. Caused mutations in vitro. Repeated dermal exposures to high concentrations in test animals resulted in reduced litter size and litter weight, and increased fetal resorptions at maternally toxic doses. Dermal exposure to high concentrations resulted in severe skin irhtation with weight loss and some mortality. Inhalation exposure to high concentrations resulted in respiratory tract irritation, lung changes/infiltration/accumulation, and reduction in lung function.

Diesel exhaust fumes: Carcinogenic in animal tests. Inhalation exposures to exhaust for 2 years in test animals resulted in lung tumors and lymphoma. Extract of particulate produced skin tumors in test animals. Caused mutations in vitro.

Contains:

NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain. ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
ETHYL BENZENE	100-41-4	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS
3 = IARC 1
4 = IARC 2A
5 = IARC 2B
6 = OSHA CARC

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid
Color: Clear (May Be Dyed)
Odor: Petroleum/Solvent
Odor Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.81 - 0.87
Flash Point [Method]: >55C (131F) [ASTM D-93]
Flammable Limits (Approximate volume % in air): LEL: 0.6 UEL: 7.0
Autoignition Temperature: >200°C (392°F)
Boiling Point / Range: 145C (293F) - 370C (698F)
Vapor Density (Air = 1): > 2 at 101 kPa
Vapor Pressure: 0.067 kPa (0.5 mm Hg) at 20 C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): > 3.5
Solubility in Water: Negligible
Viscosity: 1.7 cSt (1.7 mm2/sec) at 40 C - 4.1 cSt (4.1 mm2/sec) at 40 C
Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/A
Pour Point: < -6°C (21°F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Open flames and high energy ignition sources.

MATERIALS TO AVOID: Halogens, Strong Acids, Strong Bases, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: DIESEL FUEL
Hazard Class & Division: COMBUSTIBLE LIQUID
ID Number: NA1993
Packing Group: III
ERG Number: 128
Label(s): NONE
Transport Document Name: DIESEL FUEL, COMBUSTIBLE LIQUID, NA1993, PG III

Footnote: The flash point of this material is greater than 100 F. Regulatory classification of this material varies. DOT: Flammable liquid or combustible liquid. OSHA: Combustible liquid. IATA/IMO: Flammable liquid. This material is not regulated under 49 CFR in a container of 119 gallon capacity or less when transported solely by land, as long as the material is not a hazardous waste, a marine pollutant, or specifically listed as a hazardous substance.

LAND (TDG)

Proper Shipping Name: GAS OIL
Hazard Class & Division: 3
UN Number: 1202
Packing Group: III

SEA (IMDG)

Proper Shipping Name: GAS OIL
Hazard Class & Division: 3
EMS Number: F-E, S-E
UN Number: 1202
Packing Group: III
Label(s): 3
Transport Document Name: GAS OIL, 3, UN1202, PG III, (55°C c.c.)

AIR (IATA)

Proper Shipping Name: GAS OIL
Hazard Class & Division: 3
UN Number: 1202
Packing Group: III
Label(s): 3
Transport Document Name: GAS OIL, 3, UN1202, PG III

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, IECSC, DSL, EINECS, ELINCS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

from the surface by skimming or with suitable absorbents when conditions permit. If the Flash Point does not exceed the Ambient Air Temperature by at least 10C, use booms as a barrier to protect shorelines and allow material to evaporate. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Avoid all personal contact. Do not siphon by mouth. Use proper bonding and/or grounding procedures. For use as a motor fuel only. Do not use as a cleaning solvent or other non-motor fuel uses. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Static Accumulator: This material is a static accumulator.

STORAGE

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be grounded and bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

SECTION 8 EXPOSURE CONTROLS / RERSONAL RROTEGTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			Note	Source
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		STEL	125 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	100 ppm		N/A	ACGIH
FUELS, DIESEL [total hydrocarb, vapor&aerosol]	Vapor and aerosol.	TWA	100 mg/m3		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		STEL	15 ppm		Skin	ACGIH
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH

Internal Use Only

MHC: 1A, 0, 0, 0, 1, 1 PPEC: C

DGN: 7079307XUS (1012398)

POTENTIAL HEALTH EFFECTS

Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. Possible human cancer hazard. Under conditions of poor personal hygiene and prolonged repeated contact, some polycyclic aromatic compounds (PACs) have been suspected as a cause of skin cancer in humans. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage.

Target Organs: Lung | Skin |

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health:	1	Flammability:	2	Reactivity: 0
HMIS Hazard ID:	Health:	1	Flammability:	2	Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Remove contaminated clothing. Dry wipe exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGPAVATED BY EXPOSURE

Hydrocarbon Solvents/Petroleum Hydrocarbons- Skin contact may aggravate an existing dermatitis.

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Diesel Fuel; SYNONYMS: Diesel Fuel #1 - LS Dyed; Diesel Fuel #2 – DSL2, Off-Road, On-Road, HS–Dyed, LS–Dyed, LS-Undyed, LS Diesel; Winter Blend; Fuel Oil #2 - Diesel Fuel Oil, No. 2 Diesel Fuel Oil, Non-Hwy Dyed; Diesel Fuel – Premium, Super, Supreme, Powerblend, Non-Taxed LS Dyed; Additized; Russian Summer; Arctic; -10 and –35 F pour point depressed diesel; Lago;Burner Oil; Aleyska Turbine Fuel; Distillate - Mid; No. 2; Marine – Marine Gas Oil, MGO, DFM; Navy Fuel; F76; Marine Diesel Fuel (MDO); Intermediate Marine Fuel IF-30 to IF-460; IMF; RR Diesel Fuel - No. 40, No. 35, RR Power Fuel HS Off-Road; CARB Diesel Fuel - On-Road, Off-Road, Tax Exempt Blends, TF3, 10%; EPA - LS Diesel Fuel Dyed, Undyed, Off-Road HS Dyed

GENERAL USE: Fuel

PRODUCT DESCRIPTION: Liquid. Color varies, clear, yellow (pale to straw), red, blue, blue-green color. Petroleum odor.

TESORO

MANUFACTURER'S NAME Tesoro Petroleum Companies, Inc.	DATE PREPARED: May 23, 2002 SUPERSEDES: New Page 1 of 5
ADDRESS (NUMBER, STREET, P.O. BOX) 300 Concord Plaza Drive	TELEPHONE NUMBER FOR INFORMATION Tesoro Call Center (877) 783-7676
(CITY, STATE AND ZIP CODE) COUNTRY San Antonio, TX 78216-6999 USA	EMERGENCY TELEPHONE NUMBER Chemtrec (800) 424-9300
DISTRIBUTOR'S NAME Same	
ADDRESS (NUMBER, STREET, P.O. BOX)	TELEPHONE NUMBER FOR INFORMATION
(CITY, STATE AND ZIP CODE) COUNTRY	EMERGENCY TELEPHONE NUMBER

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS COMPONENTS	CAS #	% (by volume)	OSHA PEL PPM	OSHA PEL MG/M³	ACGIH TWA PPM	ACGIH TWA MG/M³	SARA TITLE III	RQ LBS
Contains or May Contain:								
Diesel Fuel #2	68476-34-6	0 - 100		not established				
Fuel Oil #2	68476-30-2	0 - 100		not established				
Tower Residues, atmospheric	64741-45-3	0 - 100		not established				
Residues (petroleum), Vacuum	64741-56-6	0 - 100		not established				
Heavy catalytically cracked distillate (e,f,g)	64741-61-3	0 - 100		0.2		0.2		
Light thermally cracked distillate (h)	64741-59-9	0 - 100		not established				
Catalytically cracked clarified oil (e,g)	64741-62-4	0 - 100		0.2		0.2		
Xylene (mixed) (a,b,c)	1330-20-7	0 - 1.1	100	435	100		Yes	1000
Trimethylbenzene 1,2,4 (a)	95-63-6	0 - 1.2	25	125			Yes	
Nonane	111-84-2	0 - 1.1	200	1050	200			
Sulfur, precipitated	7704-34-9	0 - 5.0		15				
Naphthalene (a,b,c,d)	91-20-3	0 - 1	10	50	10		Yes	100
Red Dye	not specified	Trace						

(a,c) See Section 15

(b) Indicates that the Resource Conservation and Recovery Act (RCRA) has determined the waste for this chemical is listed as hazardous and must be handled according to regulations in 40 CFR 260-281.

(d) Product is listed or defined as a marine pollutant in IMDG Code or 49 CFR 172.101 Appendix B, List of Marine Pollutants and must be classified as an Environmentally Hazardous Substance, Class 9, in addition to any other defined hazards for this product.

(e) California Prop 65. Safe Drinking Water and Toxic Enforcement Act of 1986, chemicals known to the state to cause cancer or reproductive toxicity. A person in the course of doing business must warn others who may consume, come into contact with, or otherwise be exposed to this chemical.

(f) IARC has determined that residual fuels are possibly carcinogenic to humans. Handling procedures and safety precautions in the MSDS should be followed to minimize employee's exposure.

(g) IARC has determined there is sufficient evidence for the carcinogenicity of catalytically cracked oils.

(h) Kidney damage may result following aspiration pneumonitis. The results of animal bioassays on middle distillate fuels show that prolonged dermal contact produces a weak to moderate carcinogenic activity.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Diesel Fuel; SYNONYMS: Diesel Fuel #1 - LS Dyed; Diesel Fuel #2 – DSL2, Off-Road, On-Road, HS–Dyed, LS–Dyed, LS-Undyed, LS Diesel; Winter Blend; Fuel Oil #2 - Diesel Fuel Oil, No. 2 Diesel Fuel Oil, Non-Hwy Dyed; Diesel Fuel – Premium, Super, Supreme, Powerblend, Non-Taxed LS Dyed; Addltized; Russian Summer; Arctic; -10 and –35 F pour point depressed diesel; Lago;Burner Oil; Aleyska Turbine Fuel; Distillate - Mid; No. 2; Marine – Marine Gas Oil, MGO, DFM; Navy Fuel; F76; Marine Diesel Fuel (MDO); Intermediate Marine Fuel IF-30 to IF-460; IMF; RR Diesel Fuel - No. 40, No. 35, RR Power Fuel HS Off-Road; CARB Diesel Fuel - On-Road, Off-Road, Tax Exempt Blends, TF3, 10%; EPA - LS Diesel Fuel Dyed, Undyed, Off-Road HS Dyed
May 23, 2002

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Various colored liquid, potentially hazardous vapors. Flammable as defined by DOT and TDG. May be classified by DOT as Combustible. Classified as Combustible by OSHA. Can cause eye and skin irrilation upon contact. Inhalation of vapors can cause anesthetic effect leading to death in pooriy ventilated areas. Hazard symbols for this product - F, Xt Risk Pfirases - R I0 20 36 38

POTENTIAL HEALTH EFFECTS

INHALATION: High concentrations are Irritating to the respiratory tract; may cause headache, dizziness, nausea, vomiting and malaise.

SKIN: Brief contact may cause slight irritation; prolonged contact may cause moderate Irritation or dermatitis.

EYES: High vapor concentration or contact may cause Irritation and discomfort.

INGESTION: May result in vomiting; aspiration of vomitus into the lungs must be avoided; DO NOT Induce vomiting. Minute amounts aspirated Into the lungs can produce severe lung injury, chemical pneumonitis, pulmonary edema or death.

CARCINOGENICITY NTP? No IARC MONOGRAPHS? No OSHA REGULATED? No

This product contains a mixture of petroleum hydrocarbons called middle distillates. Because of this broad description, many products are considered middle distillates yet they are produced by a variety of different petroleum refining processes. Toxicology data developed on some middle distillates found that they caused positive responses in some mutagenicity tests and caused skin cancer when repeatedly applied to mice over their lifetime.

SECTION 4 - FIRST AID MEASURES

INHALATION: Remove affected person to fresh air; provide oxygen If breathing is difficult; if affected person is not breathing, administer CPR and seek emergency medical attention.

SKIN: Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

EYES: Remove contact lenses. Flush eyes with clear running water for 15 minutes while holding eyelids open; if irritation persists, seek medical attention.

INGESTION: DO NOT induce vomiting; if vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs; seek immediate medical attention. Vomiting may be induced only under the supervision of a physician.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT (METHOD USED)	FLAMMABLE LIMITS	LEL: 0.3%	UEL: 10.0%
100 - 199° F (38 - 93° C) TCC	AUTOIGNITION TEMPERATURE:	350 - 625°F	NFPA CLASS: II

GENERAL HAZARDS: Product is considered combustible. Products of combustion include compounds of carbon, hydrogen and oxygen, including carbon monoxide.

EXTINGUISHING MEDIA

Carbon dioxide, water fog, dry chemical, chemical foam

FIRE FIGHTING PROCEDURES

Firefighters must wear full facepiece self - contained breathing apparatus in positive pressure mode. Do not use solid stream of water since stream will scatter and spread fire. Fine water spray can be used lo keep fire - exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers can explode due to buildup of pressure when exposed to exfreme heat. Do not use direct stream of water on pool fires as product may relgnite on water surface. Caution - Material is combustiblel

HAZARDOUS COMBUSTION PRODUCTS

Smoke, fumes, oxides of carbon

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Diesel Fuel; SYNONYMS: Diesel Fuel #1 - LS Dyed; Diesel Fuel #2 – DSL2, Off-Road, On-Road, HS–Dyed, LS–Dyed, LS-Undyed, LS Diesel; Winter Blend; Fuel Oil #2 - Diesel Fuel Oil, No. 2 Diesel Fuel Oil, Non-Hwy Dyed; Diesel Fuel – Premium, Super, Supreme, Powerblend, Non-Taxed LS Dyed; Additized; Russian Summer; Arctic; -10 and –35 F pour point depressed diesel; Lago;Burner Oil; Aleyska Turbine Fuel; Distillate - Mid; No. 2; Marine – Marine Gas Oil, MGO, DFM; Navy Fuel; F76; Marine Diesel Fuel (MDO); Intermediate Marine Fuel IF-30 to IF-460; IMF; RR Diesel Fuel - No. 40, No. 35, RR Power Fuel HS Off-Road; CARB Diesel Fuel - On-Road, Off-Road, Tax Exempt Blends, TF3, 10%; EPA - LS Diesel Fuel Dyed, Undyed, Off-Road HS Dyed
May 23, 2002

SECTION 6 - ENVIRONMENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: COMBUSTIBLE. Evacuate and ventilate area; confine and absorb into absorbent; place material into approved containers for disposal; for spills in excess of allowable limits (RQ) notify the National Response Center (800) 424 - 8802; refer to CERCLA 40 CFR 302 and SARA Title III, Section 313 40 CFR 372 for detailed instructions concerning reporting requirements. Do not discharge into lakes, ponds, streams or public waters.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: This material is combustible. It should be stored in tightly closed containers in a cool, well ventilated area. Vapor may form explosive mixtures in air All sources of ignition should be controlled. Tbis material may be classified as COMBUSTIBLE by DOT unless transported by vessel or aircraft. Refer to 49 CFR 173.120. Keep this and other chemicals out of reach of children. Avoid inhaling concentrated fumes or vapors.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

The use of local exhaust ventilation is recommended to control emissions near the source. Provide mechanical ventilation of confined spaces. Use explosion-proof ventilation equipment. See Section 2 for Component Exposure Guidelines.

PERSONAL PROTECTION:

RESPIRATORY PROTECTION (SPECIFY TYPE): None required while threshold limits (Section 2) are kept below maximum allowable concentrations; If TWA exceeds limits, NIOSH approved respirator must be worn. Refer to 29 CFR 1910.134 or European Standard EN 149 for complete regulations.

PROTECTIVE GLOVES: Neoprene or rubber gloves with cuffs.

EYE PROTECTION: Protective eyeglasses or chemical safety goggles. Refer to 29 CFR 1910.133 or European Standard EN166.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Safety eyebath nearby

WORK / HYGIENIC PRACTICES: Practice safe workplace habits. Minimize body contact with this, as well as all chemicals In general.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

VAPOR PRESSURE (PSIA) < 0.5 PSIA @ 100° F	VAPOR DENSITY (AIR = 1) > 1
SPECIFIC GRAVITY @ 60° F (WATER = 1) 0.78 - 0.955	EVAPORATION RATE (WATER = 1) < 1
SOLUBILITY IN WATER Negligible, below 1.0%	FREEZING POINT - 51° F (- 46° C)
pH Not determined	APPEARANCE AND ODOR Liquid, clear, yellow (pale to straw), red, blue, blue-green, petroleum odor.
BOILING RANGE 30 - 806° F (1.1 - 430° C)	PHYSICAL STATE Liquid
VISCOSITY 1.7 - 40.0 cS @ 100°F	VOLATILE ORGANIC COMPOUNDS (Total VOC's) 6.75 lbs / gallon

SECTION 10 - STABILITY AND REACTIVITY

STABILITY UNSTABLE: STABLE: XXX	CONDITIONS TO AVOID: Extreme temperatures, open flames

INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers, strong acids

HAZARDOUS DECOMPOSITION OR BYPRODUCTS: Decomposition will not occur if handled and stored properly. In case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

HAZARDOUS POLYMERIZATION MAY OCCUR: WILL NOT OCCUR: XXX	CONDITIONS TO AVOID: None

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Diesel Fuel; SYNONYMS: Diesel Fuel #1 - LS Dyed; Diesel Fuel #2 – DSL2, Off-Road, On-Road, HS–Dyed, LS–Dyed, LS-Undyed, LS Diesel; Winter Blend; Fuel Oil #2 - Diesel Fuel Oil, No. 2 Diesel Fuel Oil, Non-Hwy Dyed; Diesel Fuel – Premium, Super, Supreme, Powerblend, Non-Taxed LS Dyed; Addltized; Russian Summer; Arctic; -10 and –35 F pour point depressed diesel; Lago;Bumer Oil; Aleyska Turbine Fuel; Distillate - Mid; No. 2; Marine – Marine Gas Oil, MGO, DFM; Navy Fuel; F76; Marine Diesel Fuel (MDO); Intennediate Marine Fuel IF-30 to IF-460; IMF; RR Diesel Fuel - No. 40, No. 35, RR Power Fuel HS Off-Road; CARB Diesel Fuel - On-Road, Off-Road, Tax Exempt Blends, TF3, 10%; EPA - LS Diesel Fuel Dyed, Undyed, Off-Road HS Dyed
May 23, 2002

SECTION 11 - TOXICOLOGICAL INFORMATION

Hazardous Ingredients (All products may not be listed if infonnation is not available)	%	CAS #	LD50 of Ingredient (Species and Route)	LC50 of Ingredient (Species)
Contains or May Contain:				
Diesel Fuel #2	0 - 100	68476-34-6	Not established	Not established
Fuel Oil #2	0 - 100	68476-30-2	Not determined	Not determined
Tower Residues, atmospheric	0 - 100	64741-45-3	Not established	Not established
Residues (petroleum), Vacuum	0 - 100	64741-56-6	Not established	Not established
Heavy catalytically cracked distillate (e,f,g)	0 - 100	64741-61-3	Not established	Not established
Light thermally cracked distillate (h)	0 - 100	64741-59-9	Not established	Not established
Catalytically cracked clarified oil (e,g)	0 - 100	64741-62-4	Not established	Not established
Xylene (mixed) (a,b,c)	0 - 1.1	1330-20-7	4300 mg / kg Oral - rat	5000 ppm / 4H Inhalation - rat
Trimettıylbenzene 1,2,4 (a)	0 - 1.2	95-63-6	5 gm / kg Oral - mouse	18 gm / m3 / 4H Inhalation - rat
Nonane	0 - 1.1	111-84-2	218 mg / kg Oral - mouse	3200 ppm / 4H Inhalation - rat
Sulfur, precipitated	0 - 5.0	7704-34-9	Not available	Not available
Naphthalene (a,b,c,d)	0 - 1	91-20-3	1780 mg / kg Oral - rat	Not established
Red Dye	Trace	not specified	Not determined	Not determined

SECTION 12 - ECOLOGICAL INFORMATION

No data are available on the adverse effects of this material on the environment. Neither COD nor BOD data are available. Release of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. U.S.A. regulations require reporting spills of this material that could reach any surface waters. The toll free number for the U.S. Coast Guard National Response Center Is (800) 424-8802. Naphthalene (91-20-3) one of the ingredients In this mixture is classified as a Marine Pollutant.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of in accordance with Local, State, and Federal Regulations. This product may produce hazardous vapors or fumes in a closed disposal container creating a dangerous environment. Refer to "40 CFR Protection of Environment Parts 260 - 299" for complete waste disposal regulations. Consult your local, state, or Federal Environmental Protection Agency before disposing of any chemicals. Do not flush to sanitary sewer or waterway.

SECTION 14 - TRANSPORT INFORMATION

PROPER SHIPPING NAME: Diesel Fuel

DOT HAZARD CLASS / Pack Group: 3 / III
REFERENCE: 49 CFR 173.150, .203, .242
UN / NA IDENTIFICATION NUMBER: NA 1993
LABEL: Flammable
HAZARD SYMBOLS: F

IATA HAZARD CLASS / Pack Group: Not applicable
IMDG HAZARD CLASS: Not applicable
RID/ADR Dangerous Goods Code: Not applicable
UN TDG Class / Pack Group: Not applicable

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, EC, Unifed Nations TDG, and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

MATERIAL SAFETY DATA SHEET

PRODUCT NAME: Diesel Fuel; SYNONYMS: Diesel Fuel #1 - LS Dyed; Diesel Fuel #2 – DSL2, Off-Road, On-Road, HS–Dyed, LS–Dyed, LS-Undyed, LS Diesel; Winter Blend; Fuel Oil #2 - Diesel Fuel Oil, No. 2 Diesel Fuel Oil, Non-Hwy Dyed; Diesel Fuel – Premium, Super, Supreme, Powerblend, Non-Taxed LS Dyed; Additized; Russian Summer; Arctic; -10 and –35 F pour point depressed diesel; Lago;Burner Oil; Aleyska Turbine Fuel; Distillate - Mid; No. 2; Marine – Marine Gas Oil, MGO, DFM; Navy Fuel: F76; Marine Diesel Fuel (MDO); Intermediate Marine Fuel IF-30 to IF-460; IMF; RR Diesel Fuel - No. 40, No. 35, RR Power Fuel HS Off-Road; CARB Diesel Fuel - On-Road, Off-Road, Tax Exempt Blends, TF3, 10%; EPA - LS Diesel Fuel Dyed, Undyed, Off-Road HS Dyed

May 23, 2002

SECTION 15 - REGULATORY INFORMATION

TSCA (Toxic substance Control Act)
Components of this product are listed on the TSCA Inventory.

SARA TITLE III (Superfund Amendments and Reauthorization Act)

311/312 Hazard Categories
Acute health, flammable

313 Reportable Ingredients:
(a) A "Yes" In the SARA TITLE III column in Section 2 indicates a toxic chemical subject to annual reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372.

CERCLA (Comprehensive Response Compensation and Liability Act)
(c) The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) has notification requirements for releases or spills to the environment of the Reportable Quantity (RQ for this mixture > 24,000 lbs) or greater amounts, according to 40 CFR 302.

CPR (Canadian Controlled Products Regulations)
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the Infonnation required by the Controlled Products Regulations.

IDL (Canadian Ingredient Disclosure List)
Components of this product identified by CAS number are listed on the Canadian Ingredient Disclosure List are shown In Section 2.

DSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List)
Components of this product identified by CAS number are listed on the DSL or NDSL and may or may not be listed in Section 2 of this document. Only ingredients classified as "hazardous" are listed in Section 2 unless ottienwise indicated.

EINECS (European inventory of Existing Commercial Chemical Substances)
Components of this product identified by CAS numbers are on the European Inventory of Existing Commercial Chemical Substances.

EC Risk Phrases
R10 Flammable
R20 Harmful by inhalation
R36 Irritating to eyes
R38 Irritating to skin.
R51 Toxic to aquatic organisms.
R65 Damaging to lungs when swallowed

EC Safety Phrases
S16 Keep away from sources of ignition
S23 Do not breathe vapor
S25 Avoid contact with eyes
S28 After contact with skin, wash immediately with plenty of soap and water.
S29 Do not empty into drains
S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this label.

SECTION 16 - OTHER INFORMATION

Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

HMIS HAZARD RATINGS	HEALTH	1	0 = INSIGNIFICANT	3 = HIGH
	FLAMMABILITY	2	1 = SLIGHT	4 = EXTREME
	REACTIVITY	0	2 = MODERATE	
	PERSONAL PROTECTIVE EQUIPMENT	B	Safety Glasses, Gloves	

REVISION SUMMARY:
This MSDS has been revised in the following sections: No revisions available

MSDS Prepared by: Chem-Tel, Inc.
1305 N. Florida Ave.
Tampa, Florida USA 33602
(800) 255-3924 Outside USA (813) 248-0573

PRODUCT NUMBER (s): BHPP-1052, BHPP-1054, MSDS-1054, 2, 3, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 39, 46, 75, 88, 89, 90, 94, 97, 98, 99, 100, 101, 102, 103, 104, 105, 106, 108, 109, 111, 116, 117, 118, 282, 290, 291, 294, 304, 319, 351, 352, 1000, 1001, 1071,1076

PACIFIC NORTHERN OIL

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION

PRODUCT NAME:	Marine Diesel Oil (MDO)
SUPPLIER:	Pacific Northern Oil Corp. 100 W. Harrison North Tower, Suite 200 Seattle, WA 98119 (206) 282-4421
CHEMICAL NAME AND SYNONYMS:	Mixture of middle distillate hydrocarbons, with up to 15 percent volume residual fractions added.
EMERGENCY PHONE NO:	(206) 282-4421
DOT HAZARD CLASSIFICATION:	Combustible Liquid
DOT HAZARD MATERIALS SHIPPING NAME:	Fuel Oil, Diesel
LABEL REQUIRED:	None

DESCRIPTION: A mixture of middle distillate paraffinic, napthenic and aromatic hydrocarbons, mixed with up to 15 percent of residual fractions from petroleum distillation.

SECTION II - HAZARDOUS INGREDIENTS

Complex mixture of petroleum hydrocarbons boiling between 355 deg F/180 deg C and 840 deg F/450 deg C, 100 percent.

SECTION III - HEALTH INFORMATION

The petroleum hydrocarbons in this product are a mixture of paraffinic, napthenic and aromatic hydrocarbons. The aromatics contain polycyclic compounds of various concentrations. Some of these compounds may be those which have been shown to induce cancer in animals under laboratory conditions. In humans, extreme cases of poor personal hygiene and prolonged and repeated contact with some diesel oils may eventually cause cancer. Inhalation of mists from diesel oils containing certain polycyclic aromatics may also present a cancer hazard.

Exposure to vapors or mist from diesel oils may irritate eyes, nose and throat, and at high concentrations cause headache, nausea, dizziness and pulmonary irritation. Prolonged or repeated skin contact may cause skin irritation, dermatitis or other skin disorders. Aspiration of liquid into lungs may cause pneumonitis, the effects of which may be delayed.

****

SECTION IV - PHYSICAL DATA

****

BOILING RANGE: (deg F/C)	Between 355/180 and 840/450 (approx.)
VAPOR PRESSURE AT 68 deg F/20 deg C: (mmHg)	Negligible to 1
DENSITY AT 68 deg F/20 deg C: (kg/liter)	0.865 - 0.897
POUR POINT: (deg F/C)	Not above 43/6
VAPOR DENSITY: (Air = 1)	Heavier
EVAPORATION RATE: (Water = 1)	Slower
PERCENT VOLATILE AT 100 deg F/38 deg C:	Negligible
SOLUBILITY IN WATER:	Negligible
APPEARANCE AND ODOR:	Dark straw to dark brown liquid. Characteristic petroleum odor.

****

SECTION V - FIRE AND EXPLOSION HAZARD DATA

****

FLASH POINT: (PMCC method) (deg F/C)	Above 140/60
AUTO IGNITION TEMPERATURE: (deg F/C)	Above 660/350
FLAMMABLE LIMITS:	Lower: Not determined Upper: Not determined
ELECTRICAL CONDUCTIVITY: (pS/m - ASTM D2624)	10 - 100

FIRE AND EXPLOSION HAZARDS: Combustible liquid. If heated above flash point, this material will release flammable vapors which, if exposed to source of ignition, can burn or be explosive in confined spaces. Mists or spray may be flammable at temperatures below flash point. Keep away from heat or open flame.

EXTINGUISHING MEDIA: Dry chemical, foam, Halon and OO_2. Water fog may be effective. Do not use direct hose stream of water.

SPECIAL FIRE FIGHTING PRECAUTIONS: Do not enter enclosed or confined spaces without proper breathing equipment. This may include **NIOSH** approved self contained breathing apparatus. Cool tanks and containers exposed to fire with water. Improper use of water or extinguishers may cause frothing and spread fire over larger area. Avoid containers exposed to extreme heat or direct flame because of potential of product to vaporize and develop build-up of internal pressures.

****

SECTION VI - HEALTH HAZARD DATA

****

HAZARD DESCRIPTION: Combustible liquid. No acute effects from limited incidental contact. Ingestion may be accompanied by aspiration Into lungs which can cause severe pneumonitis.

EXPOSURE LIMITS: Not Determined

EMERGENCY FIRST AID

Eyes: Flush with copious water for 15 minutes holding eyelids apart and away from eyeball. Seek medical advise if pain or redness develops and persists.

Skin: Wash skin with mild soap and water as soon as practicable after contact. Remove heavily contaminated clothing and wash any contaminated underlying skin. Launder clothing before re-use.

Inhalation: If inhalation of mists or vapors causes irritation of nose or throat, or coughing, remove patient to fresh air. Seek medical advice if symptoms persist, or if difficulty In breathing occurs.

Swallowing: Do not induce vomiting because of risk of aspiration. After spontaneous vomiting, monitor patient for difficult breathing. **EFFECT OF LIQUID IN LONGS MAY BE DELAYED ONE OR TWO DAYS. IF SYMPTOMS PERSIST OR EXPOSURE IS SEVERE, SEEK PROMPT MEDICAL HELP.**

NOTE TO PHYSICIAN: Petroleum aspiration may cause severe pneumonitis ("oil pneumonia"). Vomiting should not be induced, and gastric lavage should be undertaken with consideration of endo-tracheal Intubation, especially in an unconscious patient.

****

SECTION VII - REACTIVITY DATA

****

STABILITY:	Stable under normal conditions. Not chemically reactive.
CONDITIONS TO AVOID:	Extreme heat and open flame.
MATERIALS TO AVOID:	Strong oxidizers, alkalis or acids.
HAZARDOUS DECOMPOSITION OF PRODUCT:	Burning or excessive heating may produce CO, H_2S or other harmful gasses or vapors including oxides of S, N, metals and other elements.
HAZARDOUS POLYMERIZATION:	Will not occur.

****

SECTION VIII - ENVTROHMENTAL HAZARDS

****

This product is an "oil" under the Clean Water Act. Keep out of surface waters or any water courses or sewers leading to surface waters. Keep from entering ground waters.

****

SECTION IX - SPILL, LEAK OR DISPOSAL PROCEDURES

****

Stop flow of product. Contain spill. Removn all sources of ignition. Evacuate all non-essential personnel. Clean up as soon as possible using proper protective equipment, booms, sorbents and containers. Notify local, state or federal agencies if required by law and comply with all applicable laws. Notify National Response Center if spill enters or threatens to enter surface waters - (800) 424-8802.

Maximize product recovery for reuse or recycling. Conditions of use may cause material to become state or federal "Hazardous Waste" as defined by applicable laws. Use only approved transporters, treatment and disposal sites.

****

SECTION X - SPECIAL PROTECTIVE EQUIPMENT

****

CLOTHING: Wear long sleeved clothing, gloves and other garments to limit skin contact. If splashing cannot be avoided, wear face and eye protection. Consider use of barrier creams if appropriate.

RESPIRATORY: Use only NIOSH approved respirator for organic mists to prevent overexposure in conditions where oil mist or vapors exceed occupational exposure limits. Use self contained breathing apparatus in emergencies where intense vapors, fumes, smoke, etc. is present.

****

Date of Preparation: November 18, 1985

PACIFIC NORTHERN OIL

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION

PRODUCT NAME:	Diesel Oil
SUPPLIER:	Pacific Northern Oil Corp. 100 W. Harrison North Tower, Suite 200 Seattle, WA 98119 (206) 282-4421
EMERGENCY PHONE NUMBER:	(206) 282-4421
CHEMICAL NAME AND SYNONYMS:	Mixture of middle distillate hydrocarbons. Gas Oil, #2 Oil, #2 Diesel Oil
DOT HAZARD CLASSIFICATION:	Combustible Liquid
DOT HAZARD MATERIALS SHIPPING NAME:	Fuel Oil, Diesel
LABEL REQUIRED:	None

DESCRIPTION: A mixture of middle distillate paraffinic, napthenic and aromatic hydrocarbons derived from petroleum distillation.

SECTION II - HAZARDOUS INGREDIENTS

Complex mixture of petroleum hydrocarbons boiling between 345 deg F/170 deg C and 790 deg F/420 deg C, 100 percent.

SECTION III - HEALTH INFORMATION

The petroleum hydrocarbons in this product are a mixture of paraffinic, napthenic and aromatic hydrocarbons. The aromatics contain polycyclic compounds of various concentrations. Some of these compounds may be those which have been shown to induce cancer in animals under laboratory conditions. In humans, extreme cases of poor personal hygiene and prolonged and repeated contact with some gas oils may eventually cause cancer. Inhalation of mists from gas oils containing certain polycyclic aromatics may also present a cancer hazard.

Exposure to vapors or mist from gas oils may irritate eyes, nose and throat, and at high concentrations cause headache, nausea, dizziness and pulmonary irritation. Prolonged or repeated skin contact may cause skin irritation, dermatitis or other skin disorders. Aspiration of liquid into lungs may cause pneumonitis, the effects of which may be delayed.

****

SECTION IV - PHYSICAL DATA

****

BOILING RANGE: (deg F/C)	Between 345/170 and 790/420 (approx.)
VAPOR PRESSURE AT 68 deg F/20 deg C: (mmHg)	Negligible to 1
DENSITY AT 68 deg F/20 deg C: (kg/liter)	0.826 - 0.866
CLOUD POINT: (deg F/C)	Not above 43/6
VAPOR DENSITY: (Air = 1)	Heavier
EVAPORATION RATE: (Water = 1)	Slower
PERCENT VOLATILE AT 100 deg F/38 deg C:	Negligible
SOLUBILITY IN WATER:	Negligible
APPEARANCE AND ODOR:	Clear, yellow colored liquid. Characteristic petroleum odor.

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SECTION V - FIRE AND EXPLOSION HAZARD DATA

****

FLASH POINT: (PMCC method) (deg F/C)	Above 140/60
AUTO IGNITION TEMPERATURE: (deg F/C)	Above 445/230
FLAMMABLE LIMITS:	Lower: Not determined Upper: Not determined
ELECTRICAL CONDUCTIVITY: (pS/m - ASTM D2624)	5 - 10

FIRE AND EXPLOSION HAZARDS: Combustible liquid. If heated above flash point, this material will release flammable vapors which, if exposed to source of ignition, can burn or be explosive in confined spaces. Mists or spray may be flammable at temperatures below flash point. Keep away from heat or open flame.

EXTINGUISHING MEDIA: Dry chemical, foam, Halon and CO_2. Water fog may be effective. Do not use direct hose stream of water.

SPECIAL FIRE FIGHTING PRECAUTIONS: Do not enter enclosed or confined spaces without proper breathing equipment. This may include NIOSH approved self contained breathing apparatus. Cool tanks and containers exposed to fire with water. Improper use of water or extinguishers may cause frothing and spread fire over larger area. Avoid containers exposed to extreme heat or direct flame because of potential of product to vaporize and develop build-up of internal pressures.

****

SECTION VI - HEALTH HAZARD DATA

****

HAZARD DESCRIPTION: Combustible liquid. No acute effects from limited incidental contact. Ingestion may be accompanied by aspiration into lungs which can cause severe pneumonitis.

EXPOSURE LIMITS: Not Determined

EMERGENCY FIRST AID

Eyes: Flush with copious water for 15 minutes holding eyelids apart and away from eyeball. Seek medical advise if pain or redness develops and persists.

Skin: Wash skin with mild soap and water as soon as practicable after contact. Remove heavily contaminated clothing and wash any contaminated underlying skin. Launder clothing before re-use.

Inhalation: If inhalation of mists or vapors causes irritation of nose or throat, or coughing, remove patient to fresh air. Seek medical advice if symptoms persist, or if difficulty in breathing occurs.

Swallowing: Do not Induce vomiting because of risk of aspiration. After spontaneous vomiting, monitor patient for difficult breathing. **EFFECT OF LIQUID IN LUNGS MAY BE DELAYED ONE OR TWO DAYS. IF SYMPTOMS PERSIST OR EXPOSORE IS SEVERE, SEEK PROMPT MEDICAL HELP.**

NOTE TO PHYSICIAN: Petroleum aspiration may cause severe pneumonitis ("oil pneumonia"). Vomiting should nut be Induced, and gastric lavage should be undertaken with consideration of endotracheal Intubation, especially in an unconscious patient.

SECTION VII - REACTIVITY DATA

STABILITY:	Stable under normal conditions. Not chemically reactive.
CONDITIONS TO AVOID:	Extreme heat and open flame.
MATERIALS TO AVOID:	Strong oxidizers, alkalis or acids.
HAZARDOUS DECOMPOSITION OF PRODUCT:	Burning or excessive heating may produce CO, H_2S or other harmful gasses or vapors including oxides of S, N, metals and other elements.
HAZARDOUS POLYMERIZATION:	Will not occur.

SECTION VIII - ENVIRONMENTAL HAZARDS

This product is an "oil" under the Clean Water Act. Keep out of surface waters or any water courses or sewers leading to surface waters. Keep from entering ground waters.

SECTION IX - SPILL, LEAK OR DISPOSAL PROCEDURES

Stop flow of product. Contain spill. Remove all sources of ignition. Evacuate all non-essential personnel. Clean up as soon as possible using proper protective equipment, booms, sorbents and containers. Notify local, state or federal agencies if required by law and comply with all applicable laws. Notify National Response Center if spill enters or threatens to enter surface waters - (800) 424-8802.

Maximize product recovery for reuse or recycling. Conditions of use may cause material to become state or federal "Hazardous Waste" as defined by applicable laws. Use only approved transporters, treatment and disposal sites.

****

SECTION X - SPECIAL PROTECTIVE EQUIPMENT

****

CLOTHING: Wear long sleeved clothing, gloves and other garments to limit skin contact. If splashing cannot be avoided, wear face and eye protection. Consider use of barrier creams if appropriate.

RESPIRATORY: Use only NIOSH approved respirator for organic mists to prevent overexposure in conditions where oil mist or vapors exceed occupational exposure limits. Use self contained breathing apparatus in emergencies where intense vapors, fumes, smoke, etc. Is present.

****

Date of Preparation: November 18, 1985

PACIFIC NORTHERN OIL

MATERIAL SAFETY DATA SHEET

SECTION I - MATERIAL IDENTIFICATION

PRODUCT NAME:	Residual Fuel Oil
SUPPLIER:	Pacific Northern Oil Corp. 100 W. Harrison North Tower, Suite 200 Seattle, WA 98119 (206) 282-4421
EMERGENCY PHONE NUMBER:	(206) 282-4421
CHEMICAL NAME AND SYNONYMS:	Mixture of high boiling point hydrocarbons. Fuel oil, marine fuel oil, interfuels, thin fuels.
DOT HAZARD CLASSIFICATION:	Combustible Liquid
DOT HAZARD MATERIALS SHIPPING NAME:	Fuel Oil No. 4, 5 or 6
LABEL REQUIRED:	None

DESCRIPTION: A mixture of high molecular weight paraffinic, napthenic and aromatic hydrocarbons produced as the residual fraction from distillation and the catalytic cracking process of petroleum.

SECTION II - HAZARDOUS INGREDIENTS

Complex mixture of petroleum hydrocarbons boiling above 400 deg F/204 deg C (approx.), 100 percent.

SECTION III - HEALTH INFORMATION

The petroleum hydrocarbons in this product are a mixture of paraffinic, napthenic and aromatic hydorcarbons. The aromatics contain polycyclic compounds of various concentrations. Some of these compounds may be those which have been shown to Induce cancer in animals under laboratory conditions. Tests suggest that repeated or prolonged skin contact may cause skin cancer. Inhalation of mists from oils containing these materials may also present a cancer hazard.

Exposure to vapors or mist from these products may cause nausea, dizziness and pulmonary irritation. Prolonged or repeated contact may cause skin irritation, dermatitis or other skin disorders.

Hydrogen Sulfide (H_2S) and other hazardous vapors may evolve and collect in confined spaces where liquid Is present and in storage tanks. H_2S is an extremely flammable and highly toxic gas.

Ash products from combustion contain vanadium and other heavy metal oxides. Avoid inhalation of dust.

****

SECTION IV - PHYSICAL DATA

****

BOILING POINT: (deg F/C)	Above 400/204
VAPOR PRESSURE AT 68 deg F/20 deg C: (mmHg)	Negligible to I
DENSITY AT 68 deg F/20 deg C: (kg/liter)	.900 to .995 (some blend components > 1.0)
VISCOSITY:	Variable
POUR POINT: (deg F/C)	0/-18 to 75/24
VAPOR DENSITY: (Air = 1)	Heavier
EVAPORATION RATE: (Water = 1)	Slower
PERCENT VOLATILE AT 100 deg F/38 deg C:	Negligible
SOLUBILITY IN WATER:	Negligible
APPEARANCE AND ODOR:	Brown to black liquid. Characteristic petroleum odor.

****

SECTION V - FIRE AND EXPLOSION HAZARD DATA

****

FLASH POINT: (PMCC Method) (deg F/C)	Above 140/60
AUTO IGNITION TEMPERATURE: (deg F/C)	Above 725/385
FLAMMABLE LIMITS:	Lower: Not determined Upper: Not determined
ELECTRICAL CONDUCTIVITY: (pS/m - ASTM D 2624)	500 (approx.)

FIRE AND EXPLOSION HAZARDS: Moderately combustible. When heated above flash point, this material will release flammable vapors which, If exposed to source of ignition, can burn or be explosive in confined spaces. Mists or spray may be flammable at temperatures below flash point. Keep away from heat or open flame.

EXTINGUISHING MEDIA: Dry chemical, foam, Halon and CO_2. Water fog may be effective. Do not use direct hose stream of water.

SPECIAL FIRE FIGHTING PRECAUTIONS: Do not enter enclosed or confined spaces without proper protective equipment. This may include NIOSH approved self contained breathing apparatus. Cool tanks and containers exposed to fire with water. Improper use of water or extinguishers may cause frothing and spread fire over larger area. Avoid containers exposed to extreme heat or direct flame because of potential of product to vaporize and develop build-up of Internal pressures.

****

SECTION VI - HEALTH HAZARD DATA

****

OCCUPATIONAL EXPOSURE LIMITS:

Oil Mist:	Polycyclic Aromatic Hydrocarbons as Benzene Solubles: ACGIH - TLV/TWA = 0.2 mg/cu m
Oil Mist:	Mineral: ACGIH - TLV/TWA 5 mg/ cu m
Hydrogen Sulfide:	ACGIH TWA/TLV = 10 PPM; STEL = 15 ppm

EMERGENCY FIRST AID

Eyes:	Flush with copious water for 15 minutes holding eyelids apart and away from eyeball. Seek medical advise if pain or redness develops and persists.
Skin:	Wash skin with mild soap and water as soon as practicable after contact. Remove heavily contaminated clothing and wash any contaminated underlying akin. Launder clothing before re-use.
Inhalation:	If inhalation of mists or vapors causes irritation of nose or throat, or coughing, remove patient to fresh air. Seek medical advice If symptoms persist, or if difficulty in breathing occurs.
Swallowing:	Do not Induce vomiting because of risk of aspiration. After spontaneous vomiting, monitor patient for difficult breathing. EFFECT OF LIQUID IN LUNGS MAY BE DELAYED ONE OR YWO DAYS. IF SYMPTOMS PERSIST OR EXPOSURE IS SEVERE, SEEK PROMPT MEDICAL HELP.

NOTE TO PHYSICIAN: Petroleum aspiration may cause severe pneumonitis ("oil pneumonia"). Vomiting should not be induced, and gastric lavage should be undertaken with consideration of endotracheal intubation, especially In an unconscious patient.

****

SECTION VII - REACTIVITY DATA

****

STABILITY:	Stable under normal conditions. Not chemically reactive.
CONDITIONS TO AVOID:	Extreme heat and open flame.
MATERIALS TO AVOID:	Strong oxidizers, alkalis or acids.
HAZARDOUS DECOMPOSITION OF PRODUCT:	Burning or excessive heating may produce CO, H_2S or other harmful gasses or vapors including oxides of S, N, metals and other elements.
HAZARDOUS POLYMERIZATION:	Will not occur.

****

SECTION VIII - ENVIRONMENTAL HAZARDS

****

This product is an "oil" under the Clean Water Act. Keep out of surface waters or any water courses or sewers leading to surface waters. Keep from entering ground waters.

****

SECTION IX - SPILL, LEAK OR DISPOSAL PROCEOORES

****

Stop flow of product. Contain spill. Remove all sources of ignition. Evacuate all non-essential personnel. Clean up as soon as possible using proper protective equipment, booms, sorbents and containers. Notify local, state or federal agencies if required by law and comply with all applicable laws. Notify National Response Center if spill enters or threatens to enter surface waters - (800) 424-8802.

Maximize product recovery for reuse or recycling. Conditions of use may cause material to become state or federal "Hazardous Waste" as defined by applicable laws. Use only approved transporters, treatment and disposal sites.

****

SECTION X - SPECIAL PROTECTIVE EQUIPMENT

****

CLOTHING: Wear long sleeved clothing, gloves and other garments to limit skin contact. If splashing cannot be avoided, wear face and eye protection. Consider use of barrier creams if appropriate.

RESPIRATORY: Use only NIOSH approved respirator for organic mists to prevent overexposure in conditions where oil mist or vapors exceed occupational exposure limits. When H_2S is present, avoid over exposure or use only NIOSH approved self contained breathing apparatus.

****

Date of Preparation: November 18, 1985

MATERIAL SAFETY DATA SHEET
(English - FAMM)

FAMM

FUEL OIL #6

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL IDENTITY

Product code and name:
GEN07 FUEL OIL #6
Chemical name and/or family or decription:
Fuel Oil
Manufacturer's name and address:
FUEL AND MARINE MARKETING LLC
or its Subsidiaries
2000 Westchester Avenue
White Plains, NY 10650

Transportation emergency:
(914) 831-3400
CHEMTREC (USA): (800) 424-9300

Health emergency-Company: (914)831-3400

MSDS Assistance (USA): (914)838-7204

2. COMPOSITION/INFORMATION ON INGREDIENTS

Product and/or component(s) Carcinogenic According to:

OTHER

This Material Safety Data Sheet may be used for the following products for Hazard Communications purposes only, not intended to imply identical performance/technical specifications:

00753 Fuel Oil
00755 Fuel Oil
00821 Fuel Oil LSLA
00823 Fuel Oil PA
00840 Bunker Fuel Oil
00841 Fuel Oil C HV
00847 Fuel Oil C HV
00864 Fuel Oil VLS
00867 Fuel Oil LSHP
00868 Fuel Oil C
00878 Fuel Oil CHV — #5 RS-380
00880 Fuel Oil PSP
00885 Fuel Oil Heavy BKP
00887 Fuel Oil C
00891 Fuel Oil #6
00892 Fuel Oil C-IG

Name	CAS Nr	Range in %
Blendstock of distillate and residual petroleum fractions to prescribed viscosity ranges.		100

PRODUCT IS HAZARDOUS ACCORDING TO OSHA (1910.1200).

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

WARNING STATEMENT
WARNING !
FLAMMABLE HEADSPACE VAPORS MAY BE PRESENT
CONTAINS OR MAY RELEASE HYDROGEN SULFIDE GAS (H2S) H2S GAS IS HARMFUL OR FATAL IF INHALED H2S GAS IS IRRITATING TO EYES AND RESPIRATORY TRACT H2S GAS MAY ACCUMULATE IN CONFINED SPACES
MAY CAUSE EYE IRRITATION
COMBUSTIBLE LIQUID AND VAPOR
USE ONLY AS A FUEL
CONTAINS CATALYTICALLY CRACKED CLARIFIED OIL WHICH MAY CAUSE CANCER AND BIRTH DEFECTS BASED ON ANIMAL DATA
CONTAINS POLYNUCLEAR AROMATIC HYDROCARBONS WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA

PRECAUTIONARY MEASURES:
-Keep away from heat, sparks or flame.
-Use only with adequate ventilation.
-H2S gas deadens sense of smell. Do not depend on odor to detect presence of gas.
-Use supplied air respiratory protection for cleaning large spills or upon entry into tanks, vessels, or other confined spaces.
-Avoid breathing vapor, mist, or gas.
-Avoid contact with eyes, skin, and clothing.
-Rescue procedures should be attempted ONLY after notifying others of emergency and ONLY if appropriate personal equipment is available.
-Keep container closed.
-Wash thoroughly after handling.

HMIS

Health:
2
Flammability:
2
Reactivity:
0
Special:
-

3. HAZARD IDENTIFICATION (cont'd)

NFPA

Health:
1
Flammability:
2
Reactivity
0
Special:
-
Primary Route of Exposure:
EYES
SKIN
INHALATION
EFFECTS OF OVEREXPOSURE

Acute:

Eyes:
May cause irritation, experienced as discomfort or pain, and seen as excess redness and swelling of the eye, and possible injury to the cornea.
Skin:
Brief contact may cause slight irritation. Prolonged contact, as with clothing wetted with material, may cause more severe irritation and discomfort, seen as local redness and swelling.
Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact, see other effects, below, and Section 11 for information regarding potential long term effects.
Prolonged, widespread, or repeated skin contact may result in the absorption of potentially harmful amounts of material.
Inhalation:
Vapors or mist, in excess of permissible concentrations, or in unusually high concentrations generated from spraying, heating the material or as from exposure in poorly ventilated areas or confined spaces, may cause irritation of the nose and throat, headache, nausea, and drowsiness.
Contains or may release hydrogen sulfide (H2S) gas. H2S concentrations above permissible concentrations can cause irritation of the eyes and respiratory tract, headache, dizziness, nausea, vomiting, diarrhea, and pulmonary edema. At concentrations above 300 ppm, respiratory paralysis, causing unconsciousness and death, can occur Prolonged or repeated overexposure may result in the absorption of potentially harmful amounts of material.
Ingestion:
If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur.

3. HAZARD IDENTIFICATION (cont'd)

Sensitization Properties:
Unknown.
Chronic:
No adverse effects have been documented in humans as a result of chronic exposure. Section 11 may contain applicable animal data.
Medical Conditions Aggravated by Over Exposure:
Because of its irritating properties, repeated skin contact may aggravate an existing dermatitis (skin condition).
Other Remarks:
Heating or calcining (in temperatures between 350 and 1800 F) or other processing may release particulate and/or gaseous polynuclear aromatic hydrocarbons (polycyclic aromatic hydrocarbons). These are also known as coal tar pitch volatiles. IARC has concluded that there is sufficient evidence for carcinogenicity for coal tar pitches in humans and laboratory animals. The ACGIH TLV/TWA is 0.2 mg/m3.

4. FIRST AID MEASURES

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.
Skin:
Wash skin with plenty of soap and water until all traces of material are removed. Remove and clean contaminated clothing (See Other Instructions). Destroy non-resistant footwear. Get medical attention if skin irritation persists or contact has been prolonged.
Ingestion:
If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.
Inhalation:
If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.
Other Instructions:
Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.
Note to Physician:
Inhalation exposure may result in respiratory tract injury, the delayed onset of pulmonary edema, and may predispose patient to secondary respiratory infection. Persons exposed to high concentrations should be hospitalized for observation. Contact a Poison Center for additional treatment information.

5. FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees C):
Not determined.
Flash Point (degrees C):
65 (PMCC)
Recommended Fire Extinguishing Agents and Special Procedures:
Use water spray, dry chemical, foam or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers.
Unusual or Explosive Hazards:
May polymerize violently upon exposure to heat from fire.
Special Protective Equipment for Firefighters:
Wear full protective clothing and positive pressure breathing apparatus.
FIRE:
In case of fire, use water spray, dry chemical, foam or carbon dioxide. Water may cause frothing. Use water spray to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Procedures in Case of Accidental Release, Breakage or Leakage:
Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

7. HANDLING AND STORAGE

Precautions to be Taken in

Handling:
This product contains residual fuels which must be considered as a potential flammability risk. Light hydrocarbons may be released in the headspace vapors of bunker tanks, cargo tanks, and land based terminal storage tanks. The headspace vapors may be flammable at temperatures below the flashpoint of the liquid.
Storage:
Store away from heat and open flame. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:
Avoid eye contact. Chemical type goggles should be worn. Do not wear contact lenses.
Skin Protection:
Protective clothing such as coveralls or lab coats should be worn. Launder or dry-clean when soiled. Gloves and boots resistant to chemicals and petroleum distillates required.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION (cont'd)

Respiratory Protection:
When Hydrogen Sulfide (H2S) concentrations are unknown or are equal to or greater than 10 ppm, (as in such activities as: loading, unloading, guaging, cleaning large spills or upon entry into tanks, vessels, or other confined spaces, and during rescue of individuals suspected to be overexposed to H2S), use supplied-air (airline or self-contained breathing apparatus) respiratory protection (NIOSH/MSHA Approved). The respirators must be equipped with pressure-demand regulators and operated in the pressure-demand mode ONLY. If airline units are used, a 5-minute egress bottle MUST also be carried. GAS MASKS OR OTHER AIR-PURIFYING RESPIRATORS MUST NEVER BE USED FOR H2S DUE TO POOR WARNING PROPERTIES OF THE GAS.

Ventilation:
Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.

Exposure Control for Total Product:
None established for product. Recommend coal tar pitch volatiles (benzene soluble fraction): Coal tar pitch volatiles: OSHA PEL-TWA 0.2 mg/m3. Hydrogen sulfide: OSHA PEL-TWA 10 ppm, STEL 15ppm. ACGIH TLV-TWA 10 ppm, STEL 15 ppm.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Black liquid

Odor:
Oil-type odor

Boiling Point (degrees C):
Not determined.

Melting/Freezing point (degrees C):
Not applicable.

Specific Gravity (water=1):
.946

pH of undiluted product:
Not determined.

Vapor Pressure:
Not determined.

Viscosity (degrees C):
68 cSt (50.00)

VOC Content:
Not determined.

Vapor Density (air=1):
Not determined.

Solubility in Water (%):
Not determined.

Other:
None

10. STABILITY AND REACTIVITY

This material reacts violently with:
Strong Oxidizers
Comments:
None
Products Evolved When Subjected to Heat or Combustion:
Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones. May evolve hydrogen sulfide, sulfur oxides and other sulfur containing compounds.
Hazardous Polimerizations:
No

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Median Lethal Dose

Oral:
LD50 Believed to be > 5.00 g/kg (rat) practically non-toxic
Inhalation:
Not determined.
Dermal:
LD50 Believed to be > 2.00 g/kg (rabbit) practically non-toxic
Irritation Index, Estimation of Irritation (Species)

Skin:
(Draize) Believed to be > 0.5-3.0 /8.0 (rabbit) slightly irritating
Eyes:
(Draize) Believed to be > 25.0-50.0 /110 (rabbit) moderately irritating
Sensitization:
Not determined.
Other:
Repeated dermal application of Catalytically Cracked Clarified Oil to experimental animals has been reported to elicit skin cancer, mortality and toxic effects towards the liver, thymus and bone marrow, the latter effect was accompanied by anemia. The kidney and adrenal glands have also been reported as target organs of this material. Dermal application of Catalytically Cracked Clarified Oil to preganant experimental animals has also been reported to elicit toxic effects towards the developing offspring. Catalytically Cracked Clarified Oil has been reported as a genetic toxicant in experimental studies.
Middle distillates have caused skin irritation and skin cancer in laboratory animals when repeatedly applied and left in place between applications. Studies to further evaluate the carcinogenic potential of middle distillates are currently underway. Kidney damage has also been observed in laboratory animals exposed to middle distillates.
A similar product, Texaco Fuel Oil C, is mutagenic to bacteria in the Modified Ames Test.

12. DISPOSAL CONSIDERATIONS

US/RCRA Waste Disposal Methods:

This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.

Remarks:

None

13. TRANSPORT INFORMATION

DOT:

Fuel Oil
Combustible liquid (See 49CFR 172.101(d)(4))

Identification Number:

NA1993

Packing Group:

III

Label Required:

None

IMDG:

Not evaluated

ICAO:

Not evaluated

TDG:

Not evaluated

14. REGULATORY INFORMATION

Regulatory Information:

SARA 311 Hazard Categorization:

Fire
Acute
Chronic

Regulated Chemicals:

WHMIS:

Not determined

Regulatory Comments:

This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

The Japanese Ministry of International Trade and Industry (MITI) inventory status of this product has not been determined.

The European Inventory of Chemical Substances (EINECS) or the European List of Notified Chemical Substances (ELINCS) status of this product has not been determined.

The Canadian Domestic Substances List (DSL) status of this product has not been

14. REGULATORY INFORMATION (cont'd)

determined.

The Australian Inventory of Chemical Substances (AICS) status of this product has not been determined.

15. ENVIROMENTAL INFORMATION

Aquatic Toxicity:
Not determined.
Mobility:
Not determined.
Persistence and Biodegradability:
Not determined.
Potential to Bioaccumulate:
Not determined.
Remarks:
None

16. OTHER INFORMATION

Other Information:
THIS PRODUCT IS INTENDED FOR USE AS A FUEL ONLY.
Hazardous concentrations of hydrogen sulfide (H2S) gas can accumulate in storage and rundown tanks, marine vessel compartments, sump pits or other confined spaces. When opening valves, hatches and dome covers, stand upwind, keep face as far from the opening as possible and avoid breathing any gases or vapors. When exposure concentrations are unknown and respiratory protection is not used, personal H2S warning devices should be worn. These devices should not be relied on to warn of life threatening concentrations. H2S fatigues the sense of smell rapidly. The rotten egg odor of H2S disappears quickly, even though high concentrations are still present. The ACGIH TLV/TWA for H2S is 10 ppm, the ACGIH STEL is 15 ppm.
Texaco recommends that all exposures to this product be minimized by strictly adhering to recommended occupational controls procedures to avoid any potential adverse health effects.
The ash from combustion products will contain nickel, vanadium, and other potentially toxic heavy metal oxides. Take appropriate precautions to avoid contact with and inhalation of ash from combustion and exhaust spaces.

17. PRODUCT LABEL

MATERIAL IDENTITY

Product code and name:
GEN07 FUEL OIL #6

This Material Safety Data Sheet may be used for the following products for Hazard Communications purposes only, not intended to imply identical performance/technical specifications:

00753 Fuel Oil
00755 Fuel Oil
00821 Fuel Oil LSLA
00823 Fuel Oil PA

17. PRODUCT LABEL (cont'd)

00840 Bunker Fuel Oil
00841 Fuel Oil C HV
00847 Fuel Oil C HV
00864 Fuel Oil VLS
00867 Fuel Oil LSHP
00868 Fuel Oil C
00878 Fuel Oil CHV
00880 Fuel Oil PSP
00885 Fuel Oil Heavy BKP
00887 Fuel Oil C
00891 Fuel Oil #6
00892 Fuel Oil C-IG

Blendstock of distillate and residual petroleum fractions to prescribed viscosity ranges.
CAS | % 100.00

PRODUCT IS HAZARDOUS ACCORDING TO OSHA (1910.1200).
WARNING STATEMENT
WARNING !
FLAMMABLE HEADSPACE VAPORS MAY BE PRESENT
CONTAINS OR MAY RELEASE HYDROGEN SULFIDE GAS (H2S) H2S GAS IS HARMFUL OR FATAL IF INHALED H2S GAS IS IRRITATING TO EYES AND RESPIRATORY TRACT H2S GAS MAY ACCUMULATE IN CONFINED SPACES
MAY CAUSE EYE IRRITATION
COMBUSTIBLE LIQUID AND VAPOR
USE ONLY AS A FUEL
CONTAINS CATALYTICALLY CRACKED CLARIFIED OIL WHICH MAY CAUSE CANCER AND BIRTH DEFECTS BASED ON ANIMAL DATA
CONTAINS POLYNUCLEAR AROMATIC HYDROCARBONS WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA
PRECAUTIONARY MEASURES:
-Keep away from heat, sparks or flame.
-Use only with adequate ventilation.
-H2S gas deadens sense of smell. Do not depend on odor to detect presence of gas.
-Use supplied air respiratory protection for cleaning large spills or upon entry into tanks, vessels, or other confined spaces.
-Avoid breathing vapor, mist, or gas.
-Avoid contact with eyes, skin, and clothing.
-Rescue procedures should be attempted ONLY after notifying others of emergency and ONLY if appropriate personal equipment is available.
-Keep container closed.
-Wash thoroughly after handling.

17. PRODUCT LABEL (cont'd)

HMIS

Health:
2
Flammability:
2
Reactivity:
0
Special:
-

NFPA

Health:
1
Flammability:
2
Reactivity
0
Special:
-

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.

Skin:
Wash skin with plenty of soap and water until all traces of material are removed. Remove and clean contaminated clothing (See Other Instructions). Destroy non-resistant footwear. Get medical attention if skin irritation persists or contact has been prolonged.

Ingestion:
If more than several mouthfuls of this material are swallowed, give two glasses of water (16 oz.). Get medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.

Note to Physician:
Inhalation exposure may result in respiratory tract injury, the delayed onset of pulmonary edema, and may predispose patient to secondary respiratory infection. Persons exposed to high concentrations should be hospitalized for observation. Contact a Poison Center for additional treatment information.

FIRE:
In case of fire, use water spray, dry chemical, foam or carbon dioxide. Water may cause frothing. Use water spray to cool fire-exposed containers.

17. PRODUCT LABEL (cont'd)

DOT:
Fuel Oil
Combustible liquid (See 49CFR 172.101(d)(4))
Identification Number:
NA1993
Packing Group:
III
Label Required:
None
Manufacturer's name and address:
FUEL AND MARINE MARKETING LLC
or its Subsidiaries
2000 Westchester Avenue
White Plains, NY 10650

Telephone numbers:

Transportation emergency:
(914) 831-3400
Health emergency-Company: (914)831-3400

Product Code	:GEN07
Date Issued: 1999-10-25	Supersedes:

MATERIAL SAFETY DATA SHEET
(English - FAMM)

FAMM

MARINE DIESEL BLEND

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATERIAL IDENTITY

Product code and name:
00813 MARINE DIESEL BLEND
Chemical name and/or family or decription:
Marine Fuel Oil
Manufacturer's name and address:
FUEL AND MARINE MARKETING LLC
or its Subsidiaries
2000 Westchester Avenue
White Plains, NY 10650

Transportation emergency:
(504) 680-1900
CHEMTREC (USA): (800) 424-9300

Health emergency-Company: (504) 680-1900

MSDS Assistance (USA):(845)838-7204

2. COMPOSITION/INFORMATION ON INGREDIENTS

Product and/or component(s) Carcinogenic According to:

OTHER

Name	CAS Nr	Range in %
Blends of distillate and residual petroleum fractions to prescribed viscosity ranges.		100

PRODUCT IS HAZARDOUS ACCORDING TO OSHA (1910.1200).

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

WARNING STATEMENT
WARNING !
MAY CAUSE DIZZINESS AND DROWSINESS
CAUSES SKIN IRRITATION
MAY CAUSE EYE IRRITATION
ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE
COMBUSTIBLE LIQUID AND VAPOR
USE ONLY AS A FUEL
CONTAINS MIDDLE DISTILLATES WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA

3. HAZARD IDENTIFICATION (cont'd)

PRECAUTIONARY MEASURES:
-Use only with adequate ventilation.
-Keep away from heat and flame.
-Avoid breathing vapor, mist, or gas.
-Avoid contact with eyes, skin, and clothing.
-Keep container closed.
-Wash thoroughly after handling.

HMIS

Health:
2
Flammability:
2
Reactivity:
0
Special:
-

NFPA

Health:
2
Flammability:
2
Reactivity
0
Special:
-

Primary Route of Exposure:
EYES
SKIN
INHALATION

EFFECTS OF OVEREXPOSURE

Acute:

Eyes:
May cause irritation, experienced as mild discomfort and seen as slight excess redness of the eye.

Skin:
Causes severe irritation with pain, severe excess redness and swelling with chemical burns, blister formation, and possible tissue destruction.
Other than the potential skin irritation effects noted above, acute (short term) adverse effects are not expected from brief skin contact, see other effects, below, and Section 11 for information regarding potential long term effects.
Prolonged, widespread, or repeated skin contact may result in the absorption of potentially harmful amounts of material.

3. HAZARD IDENTIFICATION (cont'd)

Inhalation:
Vapors or mist may cause irritation of the nose and throat.
Inhalation may cause dizziness, drowsiness, euphoria, loss of coordination, disorientation, headache, nausea, and vomiting. In poorly ventilated areas or confined spaces, unconsciousness and asphyxiation may result. Prolonged or repeated overexposure may result in the absorption of potentially harmful amounts of material.

Ingestion:
If more than several mouthfuls are swallowed, abdominal discomfort, nausea, and diarrhea may occur. Aspiration may occur during swallowing or vomiting resulting in lung damage.

Sensitization Properties:
Unknown.

Chronic:
NIOSH has recommended that whole diesel exhaust be regarded as a potential occupational carcinogen, based on findings of carcinogenic responses in laboratory animals exposed to whole diesel exhaust. The excess cancer risk for workers exposed to diesel exhaust has not been calculated, the probability of developing cancer should be decreased by minimizing exposure to the lowest feasible limits.
Repeated skin contact may cause a persistent irritation or dermatitis.

Medical Conditions Aggravated by Over Exposure:
Skin contact may aggravate an existing dermatitis (skin condition).

Other Remarks:
None

4. FIRST AID MEASURES

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.

Skin:
Immediately remove contaminated clothing and shoes. Under a safety shower, flush skin thoroughly with large amounts of running water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Get medical attention immediately. Discard or decontaminate clothing and shoes before reuse.

Ingestion:
If person is conscious and can swallow, give two glasses of water (16 oz.) but do not induce vomiting. If vomiting occurs, give fluids again. Have medical personnel determine if evacuation of stomach or induction of vomiting is necessary. Do not give anything by mouth to an unconscious or convulsing person.

Inhalation:
If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.

4. FIRST AID MEASURES (cont'd)

Other Instructions:
Remove and dry-clean or launder clothing soaked or soiled with this material before reuse. Dry cleaning of contaminated clothing may be more effective than normal laundering. Inform individuals responsible for cleaning of potential hazards associated with handling contaminated clothing.

Note to Physician:
Aspiration of this product during induced emesis may result in severe lung injury. If evacuation of stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Center for additional treatment information.

5. FIRE-FIGHTING MEASURES

Ignition Temperature - AIT (degrees C):
Not determined.

Flash Point (degrees C):
71.11 (CC)

Flammable Limits (%):

Recommended Fire Extinguishing Agents and Special Procedures:
Use water spray, dry chemical, foam or carbon dioxide to extinguish flames. Use water spray to cool fire-exposed containers.

Unusual or Explosive Hazards:
None

Extinguishing Media Which Must Not be Used:
Not evaluated.

Special Protective Equipment for Firefighters:
Wear full protective clothing and positive pressure breathing apparatus. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

FIRE:
In case of fire, use water spray, dry chemical, foam or carbon dioxide. Water may cause frothing. Use water spray to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Procedures in Case of Accidental Release, Breakage or Leakage:
Ventilate area. Avoid breathing vapor. Wear appropriate personal protective equipment, including appropriate respiratory protection. Contain spill if possible. Wipe up or absorb on suitable material and shovel up. Prevent entry into sewers and waterways. Avoid contact with skin, eyes or clothing.

7. HANDLING AND STORAGE

Precautions to be Taken in

7. HANDLING AND STORAGE (cont'd)

Handling:
Eye wash and safety shower should be available nearby when this product is handled or used.
Storage:
Store away from heat and open flame. Periods of exposure to high temperatures should be minimized. Water contamination should be avoided.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective Equipment (Type)

Eye/Face Protection:
Safety glasses, chemical type goggles, or face shield recommended to prevent eye contact.
Skin Protection:
Protective clothing such as coveralls or lab coats must be worn. Launder or dry-clean when soiled. Gloves resistant to chemicals and petroleum distillates required. When handling large quantities, impervious suits, gloves, and rubber boots must be worn.
Respiratory Protection:
Airborne concentrations should be kept to lowest levels possible. If vapor, mist or dust is generated and the occupational exposure limit of the product, or any component of the product, is exceeded, use appropriate NIOSH or MSHA approved air purifying or air supplied respirator after determining the airborne concentration of the contaminant. Air supplied respirators should always be worn when airborne concentration of the contaminant or oxygen content is unknown.
Ventilation:
Local exhaust ventilation recommended if generating vapor, dust, or mist. If exhaust ventilation is not available or inadequate, use MSHA or NIOSH approved respirator as appropriate.
Exposure Control for Total Product:
None established for product, refer to Section 2 for component exposure limits.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Bright and clear liquid
Odor:
Petroleum odor
Boiling Point (degrees C):
337.78
Melting/Freezing point (degrees C):
Not applicable.
Specific Gravity (water=1):
0.844

9. PHYSICAL AND CHEMICAL PROPERTIES (cont'd)

pH of undiluted product:
Not applicable.
Vapor Pressure:
< 10 mmHg (20.00)
Viscosity (degrees C):
2.5 cSt (37.78)
VOC Content:
Not determined.
Vapor Density (air=1):
Not determined.
Solubility in Water (%):
Not determined.
Other:
None

10. STABILITY AND REACTIVITY

This material reacts violently with:
Strong Oxidizers
Comments:
None
Products Evolved When Subjected to Heat or Combustion:
Toxic levels of carbon monoxide, carbon dioxide, irritating aldehydes and ketones.

-
Hazardous Polimerizations:
No

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION (ANIMAL TOXICITY DATA)

Median Lethal Dose

Oral:
LD50 Similar product 9.00 ml/kg (rat) practically non-toxic
Inhalation:
Not determined.
Dermal:
LD50 Similar product > 5.00 g/kg (rabbit) practically non-toxic
Irritation Index, Estimation of Irritation (Species)

Skin:
(Draize) Similar product 6.90 /8.0 (rabbit) extremely irritating

11. TOXICOLOGICAL INFORMATION (cont'd)

Eyes:
(Draize) Believed to be > 15.00 - 25.00 /110 (rabbit) slightly irritating
Sensitization:
Not determined.
Other:
Middle distillates have caused skin irritation and skin cancer in laboratory animals when repeatedly applied and left in place between applications. Studies to further evaluate the carcinogenic potential of middle distillates are currently underway. Kidney damage has also been observed in laboratory animals exposed to middle distillates.

12. DISPOSAL CONSIDERATIONS

Waste Disposal Methods:
Dispose of this product in accordance with local and/or national regulations.
US/RCRA Waste Disposal Methods:
This product has been evaluated for RCRA characteristics and does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc. may render the resulting materials hazardous.
Remarks:
None

13. TRANSPORT INFORMATION

DOT:
Fuel Oil
Combustible liquid (LAND TRANSPORT ONLY-49CFR 173.120(b)(2))
Identification Number:
NA 1993
Packing Group:
III
IMDG:
Not evaluated
ICAO:
Not evaluated
TDG:
Not evaluated

14. REGULATORY INFORMATION

Regulatory Information:

14. REGULATORY INFORMATION (cont'd)

SARA 311 Hazard Categorization:
Acute
Chronic
Fire
Regulated Chemicals:

WHMIS:
Not determined
Regulatory Comments:
This product, or its components, are listed on or are exempt from the Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

The Japanese Ministry of International Trade and Industry (MITI) inventory status of this product has not been determined.

The European Inventory of Chemical Substances (EINECS) or the European List of Notified Chemical Substances (ELINCS) status of this product has not been determined.

The Canadian Domestic Substances List (DSL) status of this product has not been determined.

The Australian Inventory of Chemical Substances (AICS) status of this product has not been determined.

15. ENVIROMENTAL INFORMATION

Aquatic Toxicity:
Not determined.
Mobility:
Not determined.
Persistence and Biodegradability:
Not determined.
Potential to Bioaccumulate:
Not evaluated.
Remarks:
Not evaluated.

16. OTHER INFORMATION

Other Information:
THIS PRODUCT IS NOT INTENDED FOR USE IN SPACE HEATERS. DO NOT USE IN AGRICULTURAL SPRAYS.
DO NOT USE THIS PRODUCT IN SPRAY APPLICATIONS.
Texaco recommends that all exposures to this product be minimized by strictly adhering to recommended occupational controls procedures to avoid any potential adverse health effects.

17. PRODUCT LABEL

PRODUCT LABEL

MATERIAL IDENTITY

Product code and name:
00813 MARINE DIESEL BLEND

-

Blends of distillate and residual petroleum fractions to prescribed viscosity ranges.
CAS | % 100.00

PRODUCT IS HAZARDOUS ACCORDING TO OSHA (1910.1200).

WARNING STATEMENT
WARNING !
MAY CAUSE DIZZINESS AND DROWSINESS
CAUSES SKIN IRRITATION
MAY CAUSE EYE IRRITATION
ASPIRATION HAZARD IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE
COMBUSTIBLE LIQUID AND VAPOR
USE ONLY AS A FUEL
CONTAINS MIDDLE DISTILLATES WHICH MAY CAUSE CANCER BASED ON ANIMAL DATA

PRECAUTIONARY MEASURES:
-Use only with adequate ventilation.
-Keep away from heat and flame.
-Avoid breathing vapor, mist, or gas.
-Avoid contact with eyes, skin, and clothing.
-Keep container closed.
-Wash thoroughly after handling.

HMIS

Health:
2
Flammability:
2
Reactivity:
0
Special:
-

NFPA

Health:
2

17. PRODUCT LABEL (cont'd)

Flammability:
2
Reactivity
0
Special:
-
First Aid Measures

Eyes:
Immediately flush eyes with plenty of water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Get medical attention.
Skin:
Immediately remove contaminated clothing and shoes. Under a safety shower, flush skin thoroughly with large amounts of running water for at least 15 minutes. Do not attempt to neutralize with chemical agents. Get medical attention immediately. Discard or decontaminate clothing and shoes before reuse.
Ingestion:
If person is conscious and can swallow, give two glasses of water (16 oz.) but do not induce vomiting. If vomiting occurs, give fluids again. Have medical personnel determine if evacuation of stomach or induction of vomiting is necessary. Do not give anything by mouth to an unconscious or convulsing person.
Inhalation:
If inhaled, remove to fresh air. If not breathing, clear person's airway and give artificial respiration. If breathing is difficult, qualified medical personnel may administer oxygen. Get medical attention immediately.
Note to Physician:
Aspiration of this product during induced emesis may result in severe lung injury. If evacuation of stomach is necessary, use method least likely to cause aspiration, such as gastric lavage after endotracheal intubation. Contact a Poison Center for additional treatment information.
FIRE:
In case of fire, use water spray, dry chemical, foam or carbon dioxide. Water may cause frothing. Use water spray to cool fire-exposed containers.
DOT:
Fuel Oil
Combustible liquid (LAND TRANSPORT ONLY-49CFR 173.120(b)(2))
Identification Number:
NA 1993
Packing Group:
III
Manufacturer's name and address:
FUEL AND MARINE MARKETING LLC
or its Subsidiaries
2000 Westchester Avenue
White Plains, NY 10650

17. PRODUCT LABEL (cont'd)

Telephone numbers:

Transportation emergency:
(504) 680-1900
Health emergency-Company: (504) 680-1900

Product Code :00813

Date Issued: 2000-07-21 Supersedes: 1999-02-10

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flame or heat. Keep container closed and drum bungs in place.

THE INFORMATION CONTAINED HEREIN IS BELIEVED TO BE ACCURATE. IT IS PROVIDED INDEPENDENTLY OF ANY SALE OF THE PRODUCT FOR PURPOSE OF HAZARD COMMUNICATION AS PART OF THE COMPANY'S PRODUCT STEWARDSHIP PROGRAM. IT IS NOT INTENDED TO CONSTITUTE PERFORMANCE INFORMATION CONCERNING THE PRODUCT. NO EXPRESS WARRANTY, OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS MADE WITH RESPECT TO THE PRODUCT OR THE INFORMATION CONTAINED HEREIN. DATA SHEETS ARE AVAILABLE FOR ALL THE COMPANY'S PRODUCTS. YOU ARE URGED TO OBTAIN DATA SHEETS FOR ALL THE COMPANY'S PRODUCTS YOU BUY, PROCESS, USE OR DISTRIBUTE AND YOU ARE ENCOURAGED AND REQUESTED TO ADVISE THOSE WHO MAY COME IN CONTACT WITH SUCH PRODUCTS OF THE INFORMATION CONTAINED HEREIN. TO DETERMINE APPLICABILITY OR EFFECT OF ANY LAW OR REGULATION WITH RESPECT TO THE PRODUCT, USER SHOULD CONSULT HIS LEGAL ADVISOR OR THE APPROPRIATE GOVERNMENT AGENCY. THE COMPANY DOES NOT UNDERTAKE TO FURNISH ADVICE ON SUCH MATTERS.

MATERIAL SAFETY DATA SHEET

(NON MANDATORY FORM)

IDENTITY (as used on label and list):	GB-60 Cleaner

SECTION I

Manufacturer's Name and Address	Emergency Phone No: 603-641-1040
G & B Enterprises, Inc.	Information Phone No: 503-641-1040
P.O. Box 19236	FAX No: 503-644-7257
Portland, Or. 97280-0236	Date Prepared: August 29, 1991

SECTION II Hazardous Ingredients/Identify Information

Hazardous Components (Specific Chemical Identity)

Common Name(s)	OSHA PEL	ACGIH TLV	Other limits Recommended	%
Sodium Metasilicate, Anhydrous	None	None	rat-or LD50+1,280 mg/kg	0.4

SECTION III Physical/Chemical Characteristics

Boiling Point	100 C	Specific Gravity	.99
Vapor Pressure (mm Hg.)	18 @ 20 C	Melting Point	40 C
Vapor Density (AIR = 1)	As Water	Evaporation Rate (Butyl Acetate = 1)	As Water

Solubility in Water: Complete

Appearance end Odor: A yellow green gelatinous compound with odor of lemons

SECTION IV Fire and Explosion Hazard Data

Flash Point (Method Used): No Flash

Flammable Limits: None	LEL: N/A	UEL: N/A

Extinguishing Media: This material is not combustible. Use extinguishing media for surrounding fire.

Special Fire-Fighting Procedures: Material is slippery. Firefighters should full protective clothing.

Unusual Fire and Explosion Hazards: None

MATERIAL SAFETY DATA SHEET

HEXANE

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTDKER: Distributed by Tarr, Inc.
4115 W. Turney Avenue

Phoenix, AZ 85019

INFOHMATION PHONE: (602) 233-2000

EMERGENCY PHONE: CHEMTItEC 800-242-9300 (DS) Day or night
International Csll Collect CHEMTREC 202-483-7616

Portland, Oregon
Phoenix, Arizona
Auburn, Washington
Vancouver, Washington

Print Date: 8/1/2002

PRODUCT NAME: HEXANE
PRODUCT NUMBER: 1520
UPC NUMBER:
FREPAREB BY Patricia Rodabough
OATE PREPARED: 8/1/2002
LAST REVISION: 6/13/2002
SYNONYMS:

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemicsl Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Hexane, n-	110-54-3	100	50 ppm	50 ppm

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: DANGER! Esmemely flammablc liquid and vapor.

POTENTIAL HEALTH EFFECT

EYE CONTACT: Can cause mild eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes. Can injure eye tissue.

INHALATION: Breathing of vapor or mist is possible. Breathing small amounts of this material during aomild handling is not likely to casue harmful effects. Breathing large amounts may be harmful. Symptoms usually occur at air concentrations higher than the recommended exposne limits.

INGESTION: Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. This material can get into the lungs during swallowing or vomiting. This results in lung inflammation and other lung injury.

SKIN CONTACT: Liquid is mildly irritating to the skin. Prolonged or repeated liquid contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis. Passage of this material into the body through the skin is possible, but it is unlikely that this would reult in hannfhl effects during safe handling and use.

SIGNS AND SYMPTOMS OF EXPOSURE:
Irritation as noted above. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausee; in extreme cases, unconsciousness and death may occur. Tmget Organ Effects: Prolonged and repeated exposure to n-hexane may cause peripheral neuropathy by damaging peripheral nerve tissue (that of the arms and legs) and result in muscular weakness and loss of sensation. Overexposon: to tlus material (or its components) has been suggested as a casue of the following effects in laboratory animals: mild, reversible liver effects, mild, reversible kidney effects, nasal damage, nervous system damage, testis damage, lung damage,. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: visual impairment, central nervous system effects.

4. FIRST AID MEASURES

EYE CONTACT: Iamediately flush eyes with plenty of water for at least 15 miimtes vhile holding eyelids open. If symtitams persist or there is any visual dilliculty, seelc medical attention.

INHALATION: Remnvc to fresh air. If not breathing, give artilicial respiration. If breathing is difficult, oxygen should be administerod t y qualiiikd personnel. Get medical attention immediately.

INGESTION: Seek ntedical attentica. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the lefl side with the bcad down. Contact a pbysician, meidcal facility, or poison coatrol center for advice about whether to induce vomiting. If possible, do not leave individuai unattended.

SKIN CONTACT: Remove.contaminated clothing. Wash expose area with soap and wnter. If symptoms penist, seek medical attention. Laooder clofhing belbre reuse.

AGGRAVATED MEDICAL CONDITIONS:

Preexdstiag disorders of the following orgaas (or organ systems) tnay be aggravated by exposurc to the maierial: tespiratory tract, skin, long (for example, asthma-hke conditions), central nervous system, nervous system, male tspxoductivc system.

SUPPLEMENTAL HEALTH INFORMATION:

* Note to physician: Inhalaium of high cancentrations of this material, as could occur in cnclosed spaces or during deliberate abuse, may be associated with cardiac anitythmias. Sympathomimetic drags may initiate cardiac anhythmias in peraon exposed to thims material. This material is an aspiration hazard. Potential danger ihm aspiration tmust be weighed against possible otal toxicity when deciding whether to induce vomiting. See Aggrevated Medical Conditions.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: -10 F **FLASH POINT METHOD USED:** Tag Closed Cup

AUTOIGNITION: 437 F **LEL:** 0.01 **UEL:** 0.075

EXTINGUISBING MEDIA:

Use regular foam, dry chemical, or CO2.

SPECIAL FIRE FIGHTING PROCEDURES:

Water may he ineffective but can be used to cool containers exposed to beat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot burning bquid Wear a selfcontaincd treathing apparatus with a full Ihcepicce operated in the positive pressmc demand mode with appropriate turn-out gear and chemicals resistant personal protective equipment. Refer to the personal protective equipment section ofthis MSDS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Material is highly volatile and readily gives off flammable vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations distant from material handling point. Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively.

COMBUSTION PRODUCTS:

Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

WARNING. Extremely Flammable. Ventilate area of kak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.

7. HANLDING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), oil hazard precautions given in the data sheet must be observed. All live-gallon pails and larger metal containers, including tank cars and tank trucks, should be grounded and/or bonded when matial is transferred. Hydrocarbon solvents are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering or pumping at high flow rates. if this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Keep away from heat, sparks, and flame. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical

processes without analysis of the actual process conditona. Any use of this product in elevated tenrperature processes should be thoroughly evaluated to establish and maintain safe operation conditions. Surfaces that are hot may ignite even liquid product in the absence of sparks or flame. Extinguish pilot ligbts, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

OTHER PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN! Empty contoiners retain product residue ami cart be dangerous. Do nm pnssurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flamc, spnrks static electricity, or other sources of ignition.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-supplying respir. of an air-purifying respir. for organic vapors.

VENTILATION:

Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PROTECTIVE GLOVES:

Wear resistant gloves (cousult your safety equipment soppher). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

EYE PROTECTION:

Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK / HYGENIC PRACTICES:

Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with and eyewash facility and a safety shower.

EXPOSURE GUIDELINES:

May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventillation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

SOLUBILITY IN WATER: Insoluble in water.

APPEARANCE AND ODOR: Clear, colorless liquid with hydrocarbon odor.

BOILING POINT:	149 - 159 F	**PERCENT VOLATILE:**	100
VAPOR PRESSURE:	59.2 mmHg @ 68 F	**PH:**	N/A
EVAPORATION RATE:	9.00 (n-butyl acetate)	**MOLECULAR WEIGHT:**	86.0
POUNDS PER GALLON:	5.630	**VAPOR DENSITY:**	3.0, Air = I
SPECIFIC GRAVITY:	0.675	**OTHER PROPERTIES:**	VOC's: 5.63 lbs/gal, 675 g/l
MELTING POINT:	NDA		
FREEZING POINT:	14.0 F		

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Avoid heat, sparks, flame and contact with strong oxidizing agents. Prevent vapor accumulation.

INCOMPATIBILITY:

Strong oxidizers.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS:

Carbon monoxide and unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: Avoid heat, flame, and other sources of ignition.

11. TOXICOLOGY INFORMATION

Laboratory studies have shown that petroleum distillates may cause kidney, liver, or lung damage. reports have associated repeated and prolonged overexposure to solvents with permanent brain nd nervous system damage. Developmental Information: This material (or a component) has been shown to cause harm to the fetus in laboratory animal studies. Harm to the fetus occurs only at exposure levels that harm the pregnant animal. The relevance of these finding sto humans is uncertain. Cancer Information: Based on the available information, this material cannot be classified with regard to carcinogenicity. This material is not listed as a carcinogen by the Internation Agency for Research on Cancer, the National Toxicology Program, or the Occupational Safety and Health Administration.

12. ECOLOGICAL INFORMATION

Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

13. DISPOSAL CONSIDERATIONS

The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

14. TRANSPORTATION INFORMATION

DOT CLASS:	Flammable liquid	**PACKING GROUP:**	0
HAZARD CLASS:	3	**GUIDE NUMBER:**	128
UN NUMBER:	UN 1208	**PROPER SHIPPING NAME:**	Hexanes

15. REGULATORY INFORMATION

This product is listed on the EPA/TSCA inventory of chemical substances. RQ (reportable quantity) = 5,000 lbs. (49 CFR 172.101 and 40 CFR 302.4(a)). California Proposition 65: The following statement is made in order to comply with the Cahfornia Safe Drinking Water and Toxic Enforcement Act of 1986: This product coomins the following substance(s) known to the state of California to cause cancer. BENZENE. California Proposition 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the staie of Cahfornia to cause reproductive harm. BENZENE.

16. OTHER INFORMATON

HMIS INFORMATION: **HEALTH:** 2 **FLAMMABILITY:** 3 **REACTIVITY:** 0 **PROTECTIVE:** H

SARA Title III Information:

SARA 302:	To the best of our knowledge, this product is not listed as an extremely hazardous substance.
SARA 311/312:	This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard and a fire hazard.
SARA 313:	n-hexane (110-54-3)

N/A = Not Applicable
NDA = No Data Available

Disclaimer

The information contained herein is based on the data available to us and is believed to be accurate. However, Tarr, Incorporated makes no warranty, expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof. Tarr, Inc. assumes no responsibility for injuries from the use of the product described herein.

705 North Mountain Road
Newington, Connecticut 06111
Emergency Phone (203) 278-1280
Telex: 275207

LOCTITE® MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION		PRODUCT NO.: 404
PRODUCT NAME:	Quick Set™ 404 Industrial Adhesive	Issued: 5/1/91
ITEM NUMBERS:	46551, 46548, 46561	
PRODUCT TYPE:	Cyanoacrylate Ester	
FORMULA NO.:	Does not apply	

II. COMPOSITION

Ingredients	CAS No.	%
Ethyl cyanoacrylate	7085-85-0	90-95
Poly (methyl methacrylate)	9011-14-7	5-10
HYDROQUINONE	123-31-9	0.1-1

III. CHEMICAL AND PHYSICAL PROPERTIES

Vapor Pressure:	Less than 0.2mm
Vapor Density:	Approximately 3
Solubility in Water:	Polymerized by vater.
Specific Gravity:	1.09 at 75 F
Boiling Point:	More than 300°F
Volatile Organic Compound (EPA Method 24)	93.0%
Evaporation Rate (Ether = 1)	Not available
pH:	Does not apply
Appearance:	Clear liquid
Odor:	Pungent

IV. FLAMMABILITY AND EXPLOSIVE PROPERTIES

Flash Point:	150 - 200°F	Method: Tag Closed Cup
Estimated NFPA Code:		
Health Hazard:	2	
Fire Hazard:	2	
Reactivity Hazard:	2	
Specific Hazard:	No water.	
Estimated HMIS Code:		
Health Hazard:	2	
Flammability Hazard:	2	
Reactivity Hazard:	2	
Personal Protection:	See Section X.	
Explosive Limits:		
(% by volume in air)Lower	Not available	
(% by volume in air)Upper	Not available	
Recommended Extinguishing Agents:	Carbon dioxide, foam, dry chemical	
Hazardous Products Formed by Fire or Thermal Decomp	Irritating organic vapors	
Unusual Fire or Explosion Hazards:	None	
Compressed Gases:	None	
Pressure at Room Temp.:	Does not apply	

V. SPILL OR LEAK AND DISPOSAL PROCEDURES

Steps to be taken in case of spill or leak:	Flood with water to polymerize completely. Soak up with an inert absorbent.
Recommended methods of disposal:	Polymerize as above. Incinerate in accordance with EPA and local regulations.

VI. STORAGE AND HANDLING PROCEDURES

Storage:	Store at or below 75°F to preserve shelf life.
Handling:	Avoid contact with skin and eyes. Avoid breathing vapor.

VII. SHIPPING REGULATIONS

Type or Class	DOT: Unrestricted (Not more than one pint); ORM-A (1 pint to 110 gallons); Combustible liquid (Not less than 110 gallons) lATA: Unrestricted; DOT regulations apply in U.S.
Proper Shipping Name	DOT: Unrestricted (Not more than one pint); ORM-A, n.o.s. (Ethyl cyanoacrylate solution) (1 pint to 110 gallons); Combustible liquid, n.o.s. (Ethyl cyanoacrylate solution)(Not less than 110 galions) lATA: Unrestricted; DOT regulations apply in U.S.
Identification Number:	

Product Name: Quick Set(TM) 404 Industrial Adhesive
Item No.: 46551, 46548, 46561

VII. SHIPPING REGULATIONS (continued)

DOT: None (Not more than one pint);
NA 1693 (One pint to 110 gallons);
NA 1993 (Not less than 110 gallons)

IATA: None (Not more than 16 ounces (one pint domestic))
ID 8027 (More than 16 ounces)
NA 1693 (More than one pint)(Domestic air only)

VIII. REACTIVITY DATA

Stability: Stable
Hazardous Polymerization: Will Not Occur
Hazardous Decomposition Products (non-thermal): None
Incompatability: Polymerized by contact with water, alcohols, amines, alkalies.

IX. EMERGENCY TREATMENT PROCEDURES

Ingestion: See supplemental page for emergency procedures.
Inhalation: Remove to fresh air. Treat symptomatically.
Skin Contact: See supplemental page for emergency procedures.
Eye Contact: See supplemental page for emergency procedures.

X. PERSONAL PROTECTION

Eyes: Safety glasses or goggles.
Skin: Polyethylene gloves recommended. Do not use cotton gloves.
Ventilation: Positive down-draft exhaust ventilation should be provided to maintain vapor concentration below TLV.

XI. HEALTH HAZARD DATA

Toxicity: Bonds skin rapidly and strongly.
Skin and eye irritant.
Estimated oral LD50 more than 5000 mg/kg.
Estimated dermal LD50 more than 2000 mg/kg.

Primary Routes of Entry: None known

Signs and Symptoms or Exposure: Vapor is irritating to eyes and mucous membranes above TLV. Prolonged and repeated overexposure to vapors may provide allergic reactions with asthma-like symptoms in sensitive individuals.

Existing Conditions Aggravated by Exposure: None known

Exposure Limits Ingredients	ACGIH (TLV)	OSHA (TLV)	OTHER
Ethyl cyanoacrylate	None	None	2 ppm TWA
Poly (methyl methacrylate)	None	None	None
HYDROQUINONE	2 mg/m3 TWA	2 mg/m3 TWA	None

Ingredients	Literature Referenced Target Organ and Other Health Effects	Carcinogen NTP	IARC	OSHA
Ethyl cyanoacrylate	LUN	NO	NO	NO
Poly (methyl methacrylate)	No Data	NO	N/A	NO
HYDROQUINONE	No Data	NO	N/A	NO

Abbreviations

N/A Not Applicable LUN Lung

XII. PREPARATION INFORMATION

Prepared By: Stephen Repetto
Title: Research Chemist, Environmental Health & Safety
Company: Loctite Corp., 705 N. Mt. Rd, Newington, CT 06111
(24hr.) Phone: (203) 278-1280
Revision Date: March 06, 1991 Revision: 0015

Product Name: Quick Set(TM) 404 Industrial Adhesive
Item No.: 46551, 46548, 46561

Supplement

INFORMATION FOR FIRST AID AND CASUALTY ON TREATMENT FOR ADHESION OF HUMAN SKIN TO ITSELF IF CAUSED BY CYANOACRYLATE ADHESIVES

Cyanoacrylate adhesive is a very fast setting and strong adhesive. It bonds human tissue including skin in seconds. Experience has shown that accidents due to cyanoacrylates are handled best by passive, non-surgical first aid. Treatment of specific types of accidents are given below.

SKIN ADHESION
First immerse the bonded surfaces in warm soapy water. Peel or roll the surfaces apart with the aid of a blunt edge, e.g. a spatula or a teaspoon handle; then remove adhesive from the skin with soap and water. Do not try to pull surfaces apart with a direct opposing action.

EYELID TO EYELID OR EYEBALL ADHESION
In the event that eyelids are stuck together or bonded to the eyeball, wash thoroughly with warm water and apply a gauze patch. The eye will open without further action, typically in 1-4 days. There will be no residual damage. Do not try to open the eyes by manipulation.

ADHESIVE ON THE EYEBALL
Cyanoacrylate introduced into the eyes will attach itself to the eye protein and will disassociate from it over intermittent periods, generally covering several hours. This will cause periods of weeping until clearance is achieved. During the period of contamination, double vision may be experienced together with a lachrymatory effect, and it is important to understand the cause and realize that disassociation will normally occur within a matter of hours, even with gross contamination.

MOUTH
If lips are accidentally stuck together, apply lots of warm water to the lips and encourage maximum wetting and pressure from saliva inside the mouth. Peel or roll lips apart. Do not try to pull the lips with direct opposing action.
It is almost impossible to swallow cyanoacrylate. The adhesive solidifies and adheres in the mouth. Saliva will lift the adhesive in 1/2 to 2 days. In case a lump forms in the mouth, position the patient to prevent ingestion of the lump when it detaches.

BURNS
Cyanoacrylates give off heat on solidification. In rare cases a large drop will increase in temperature enough to cause a burn.
Burns should be treated normally after the lump of cyanoacrylate is released from the tissue as described above.

SURGERY
It should never be necessary to use such a drastic method to separate accidentally bonded skin.

ENVIRONMENTAL DATA SHEET

97449 (9-87)

PRODUCT ▶ SHELL ALVANIA(R) EP GREASE 2

PRODUCT CODE ▶ 71032

SECTION I PRODUCT/COMPOSITION

NO.	COMPONENT	CAS NUMBER	PERCENT
P	SHELL ALVANIA EP GREASE 2	MIXTURE	100
1	SEVERELY, HYDROTREATED HEAVY NAPHTHENIC DIST.	64742-52-5	50-60
2	SOLVENT REFINED, HYDROTREATED RESIDUAL OIL	64742-57-0	25-30
3	LITHIUM HYDROXYSTEARATE	7620-77-1	10
4	SULFURIZED LARD OIL	61790-49-6	7
5	NAPHTHENIC ACIDS, LEAD SALTS	61790-14-5	2.5

SECTION II SARA TITLE III INFORMATION

NO.	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC 313 (*3)	313 CATEGORY (*4)	311/312 CATEGORIES (*5)
5			YES	LEAD COMPOUNDS	H-2

FOOTNOTES

*1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC.302
*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
*3 = TOXIC CHEMICAL, SEC 313
*4 = CATEGORY AS REQUIRED EY SEC 313 (40 CFR 372.65 C), MUST BE USED ON TOXIC RELEASE INVENTORY FORM
*5 = HAZARD CATEGORY FOR SARA SEC. 311/312 REPORTING
HEALTH H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD H-2 = DELAYED (CHRONIC) HEALTH HAZARD
PHYSICAL P-3 = FIRE HAZARD P-4 = SUDDEN RELEASE OF PRESSURE HAZARD
P-5 = REACTIVE HAZARD

SECTION III ENVIRONMENTAL RELEASE INFORMATION

EPA - CLEAN WATER ACT (CWA). THIS PRODUCT IS CLASSIFIED AS AN OIL UNDER SECTION 311 OF THE CLEAN WATER ACT. SPILLS ENTERING (A) SURFACE WATERS OR (B) ANY WATERCOURSES OR SEWERS ENTERING/LEAVING TO SURFACE WATERS THAT CAUSE A SHEEN MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, 800-424-8802.

SECTION IV RCRA INFORMATION

CONTAINS LEAD - DISPOSE OF AS REQUIRED BY EPA FOR MATERIALS CONTAINING EXTRACTABLE (>5 PPM) LEAD - HAZARDOUS WASTE NUMBER D008.

BEING BURNED FOR ENERGY RECOVERY IS MINIMALLY REGULATED UNDER RCRA (A VARIETY OF ADMINISTRATIVE REQUIREMENTS MUST BE MET). USED OIL THAT IS RECYCLED IN ANY OTHER WAY IS CURRENTLY EXEMPT FROM SUBTITLE C REGULATION. CHECK YOUR LOCAL AND STATE AUTHORITIES FOR OTHER REGULATIONS THAT MAY APPLY.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: SEPTEMBER 26, 1991

SHELL OIL COMPANY
SAFETY, INDUSTRIAL HYGIENE AND ENVIRONMENT
P. O. BOX 4320
HOUSTON, TX 77210

FOR ADDITIONAL INFORMATION ON THIS ENVIRONMENTAL DATA PLEASE CALL
(713) 241-2252

FOR EMERGENCY ASSISTANCE PLEASE CALL
SHELL: (713) 473-9461
CHEMTREC: (800) 424-9300

SECTION XII SPECIAL PRECAUTIONS

STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.

AVOID SKIN CONTACT. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. PROPERLY DISPOSE OF CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, THAT CANNOT BE DECONTAMINATED.

SECTION XIII TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
NOT HAZARDOUS BY D.O.T. REGULATIONS

SECTION XIV OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV STATE REGULATORY INFORMATION

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT	PERCENT	STATE CODE
NAPHTHENIC ACIDS, LEAD SALTS (CAS NO: G1790-14-5)	2.5	CASS

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NU = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

THIS PRODUCT CONTAINS A CHEMICAL OR CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR REPRODUCTIVE TOXICITY.

SECTION XVI SPECIAL NOTES

REVISIONS WERE MADE IN SECTION XV AND EDS - SECTIONS III AND IV.

LUBRICANTS/SHELL

MATERIAL SAFETY DATA SHEET

MSDS NUMBER ▶ 67,311-5 PAGE 1

37367 (4-85)

24 HOUR EMERGENCY ASSISTANCE	GENERAL MSDS ASSISTANCE
SHELL: 713-473-9461 CHEMTREC: 800-424-9300	SHELL: 713-241-4819

ACUTE HEALTH *	FIRE	REACTIVITY	HAZARD RATING ▶
1	1	0	LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4

*For acute and chronic health effects refer to the discussion in Section III

BE SAFE
READ OUR PRODUCT SAFETY INFORMATION ... AND PASS IT ON
(PRODUCT LIABILITY LAW REQUIRES IT)

SECTION I	NAME
PRODUCT ▶	SHELL DONAX(R) TG PLUS FLUID
CHEMICAL NAME ▶	MIXTURE (SEE SEC II-A)
CHEMICAL FAMILY ▶	PETROLEUM HYDROCARBON; TRANSMISSION FLUID
SHELL CODE ▶	53000

SECTION II-A PRODUCT/INGREDIENT

NO.	COMPOSITION	CAS NUMBER	PERCENT
P	SHELL DONAX TG PLUS FLUID	MIXTURE	100
1	SOLVENT REFINED, HYDROTREATED, HEAVY PARAFFINIC DISTILLATE	64742-54-7	60-80
2	SOLVENT REFINED, HYDROTREATED, LIGHT NAPHTHENIC DISTILLATE	64742-53-6	5-10
3	SOLVENT REFINED, CATALYTIC DEWAXED HEAVY PARAFFINIC OIL	64742-70-7	0-10
4	SOLVENT REFINED, HYDROTREATED MIDDLE DISTILLATE	64742-46-7	0-10
5	ADDITIVE	MIXTURE	10-20

SECTION II-B ACUTE TOXICITY DATA

NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	NO DATA AVAILABLE		

BASED UPON DATA AVAILABLE TO SHELL, COMPONENT 5 IN THIS PRODUCT IS NOT HAZARDOUS UNDER OSHA HAZARD COMMUNICATION (29 CFR 1910.1200).

SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

EYE CONTACT
BASED ON COMPONENT INFORMATION PRODUCT IS NO MORE THAN MINIMALLY IRRITATING TO THE EYES.

SKIN CONTACT
BASED ON COMPONENT INFORMATION PRODUCT IS NO MORE THAN MILDLY IRRITATING TO THE SKIN. PROLONGED AND REPEATED CONTACT CAN RESULT IN VARIOUS SKIN DISORDERS SUCH AS DERMATITIS, FOLLICULITIS OR OIL ACNE.

INHALATION
INHALATION OF VAPORS (GENERATED AT HIGH TEMPERATURES ONLY) OR OIL MIST FROM THIS PRODUCT MAY CAUSE MINOR IRRITATION OF THE MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

INGESTION
BASED ON COMPONENT INFORMATION THIS PRODUCT IS NO MORE THAN SLIGHTLY TOXIC IF SWALLOWED.

SIGNS AND SYMPTOMS
IRRITATION AS NOTED ABOVE.

AGGRAVATED MEDICAL CONDITIONS
PREEXISTING SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

	OSHA		ACGIH		OTHER
NO.	PEL/TWA	PEL/CEILING	TLV/TWA	TLV/STEL	
P	5 MG/M3*	NONE	5 MG/M3*	10 MG/M3*	

*OIL MIST, MINERAL

SECTION V EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT
REMOVE CONTAMINATED CLOTHING AND WIPE EXCESS OFF. WASH WITH SOAP AND WATER OR A WATERLESS HAND CLEANER FOLLOWED BY SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

INHALATION
REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

INGESTION
DO NOT INDUCE VOMITING. IN GENERAL NO TREATMENT IS NECESSARY UNLESS LARGE QUANTITIES OF PRODUCT ARE INGESTED. HOWEVER, GET MEDICAL ADVICE.

NOTE TO PHYSICIAN
IN GENERAL, EMESIS INDUCTION IS UNNECESSARY IN HIGH VISCOSITY, LOW VOLATILITY PRODUCTS, I.E., MOST OILS AND GREASES.

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

AMOCO HAS REPORTED TO THE U.S. EPA PURSUANT TO SECTION 8(E) OF TSCA THAT A SAMPLE OF HYDROTREATED MIDDLE DISTILLATE (CAS REGISTRY NUMBER 64742-46-7) APPLIED REPEATEDLY TO THE SKIN OF EXPERIMENTAL ANIMALS OVER THEIR LIFETIME PRODUCED A WEAK TUMORIGENIC RESPONSE IN THE SKIN. THE FULL REFINING/PROCESS HISTORY OF THIS SAMPLE WAS NOT PROVIDED IN AMOCO'S SUBMISSION.

SECTION VII PHYSICAL DATA

BOILING POINT: NOT AVAILABLE (DEG F)

SPECIFIC GRAVITY: 0.8772 (H2O=1)

VAPOR PRESSURE: NOT AVAILABLE (MM HG)

MELTING POINT: -59.8(PDUR POINT) (DEG F)

SOLUBILITY: (IN WATER) NEGLIGIBLE

VAPOR DENSITY: (AIR=1) NOT AVAILABLE

EVAPORATION RATE (N-BUTYL ACETATE = 1): NOT AVAILABLE

VIS, CS AT 100 DEG C. (212 F)=6.8

APPEARANCE AND ODOR:
RED LIQUID. SLIGHT HYDROCARBON ODOR.

SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD:
177 DEG C (PMCC)

FLAMMABLE LIMITS /% VOLUME IN AIR
LOWER: N/AV UPPER: N/AV

EXTINGUISHING MEDIA
USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS
MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE-SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE-PRESSURE NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

SECTION IX REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:
AVOID HEAT, OPEN FLAMES AND OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS
THERMAL DECOMPOSITION PRODUCTS ARE HIGHLY DEPENDENT ON THE COMBUSTION CONDITIONS. A COMPLEX MIXTURE OF AIRBORNE SOLID, LIQUID, PARTICULATES AND GASES WILL EVOLVE WHEN THIS MATERIAL UNDERGOES PYROLYSIS OR COMBUSTION. CARBON MONOXIDE, OXIDES OF SULFUR, AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FOUND UPON COMBUSTION.

SECTION X EMPLOYEE PROTECTION

RESPIRATORY PROTECTION
IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SECTION IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

PROTECTIVE CLOTHING
WEAR CHEMICAL RESISTANT GLOVES AND OTHER PROTECTIVE CLOTHING AS REQUIRED TO MINIMIZE SKIN CONTACT. WEAR SAFETY GOGGLES TO AVOID EYE CONTACT. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROIVDED BY NITRILE GLOVES.

SECTION XI ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES
MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. *** LARGE SPILLS *** WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACCUM TRUCKS OR PUMP TO STORAGE SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND, OR OTHER SUITABLE MATERIALS; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY.

SECTION XII SPECIAL PRECAUTIONS

MINIMIZE SKIN CONTACT. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. PROPERLY DISPOSE OF CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, THAT CANNOT BE DECONTAMINATED.

STORE IN A COOL, DRY PLACE WITH ADEQUATE VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.

SECTION XIII TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
NOT HAZARDOUS BY D.O.T. REGULATIONS

SECTION XIV OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV STATE REGULATORY INFORMATION

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT	PERCENT	STATE CODE
SOL., REF., HYDROTREATED LIGHT NAPHTHENIC DISTILLATE (CAS NO: 64742-53-6)	5-10	MA
SOL., REF., CATALYTIC DEWAXED HEAVY PARAFFINIC OIL (CAS NO: 64742-70-7)	0-10	MA

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

SECTION XVI SPECIAL NOTES

REVISIONS WERE MADE IN SECTIONS II-A AND VI AND EDS - SECTION I.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED:DECEMBER 02, 1991

G. A. VAN GELDER

BE SAFE

READ OUR PRODUCT
SAFETY INFORMATION ...AND PASS IT ON
(PRODUCT LIABILITY LAW
REQUIRES IT)

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
P. O. BOX 4320
HOUSTON, TX 77210

LUBRICANTS/SHELL

MATERIAL SAFETY DATA SHEET

B7367 (4-85)

MSDS NUMBER ▶ 864,040-5 PAGE 1

24 HOUR EMERGENCY ASSISTANCE	GENERAL MSDS ASSISTANCE
SHELL: 713-473-9461 CHEMTREC: 800-424-9300	SHELL: 713-241-4819

ACUTE HEALTH *	FIRE	REACTIVITY	HAZARD RATING ▶
1	1	0	LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4

*For acute and chronic health effects refer to the discussion in Section III

BE SAFE
READ OUR PRODUCT SAFETY INFORMATION ... AND PASS IT ON
(PRODUCT LIABILITY LAW REQUIRES IT)

SECTION I	NAME
PRODUCT ▶	SHELL SPIRAX(R) HEAVY DUTY GEAR OIL 85W/140
CHEMICAL NAME ▶	MIXTURE (SEE SEC. IIA)
CHEMICAL FAMILY ▶	PETROLEUM HYDROCARBON; GEAR OIL
SHELL CODE ▶	59212

SECTION II-A PRODUCT/INGREDIENT

NO.	COMPOSITION	CAS NUMBER	PERCENT
P	SHELL SPIRAX HEAVY DUTY GEAR OIL 85W/140	MIXTURE	100
1	SOLVENT REFINED, HYDROTREATED RESIDUAL OIL	64742-57-0	75-80
2	SOL. REF., HYDROTREATED, ACID TREATED HEAVY NAPHTHENIC DIST.	64742-18-3	0-15
3	SEVERELY HYDROTREATED HEAVY NAPHTHENIC DIST.	64742-52-5	0-20
4	ADDITIVE PACKAGE	MIXTURE	<10

SECTION II-B ACUTE TOXICITY DATA

NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
P	NOT AVAILABLE		

SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

EYE CONTACT
BASED ON COMPONENT INFORMATION PRODUCT IS NO MORE THAN MINIMALLY IRRITATING TO THE EYES.

SKIN CONTACT
BASED ON COMPONENT INFORMATION PRODUCT IS NO MORE THAN MILDLY IRRITATING TO THE SKIN. PROLONGED AND REPEATED CONTACT CAN RESULT IN VARIOUS SKIN DISORDERS SUCH AS DERMATITIS. FOLLICULITIS OR OIL ACNE.

INHALATION
INHALATION OF VAPORS (GENERATED AT HIGH TEMPERATURES ONLY) OR OIL MIST FROM THIS PRODUCT MAY CAUSE MINOR IRRITATION OF THE MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT.

INGESTION
BASED ON COMPONENT INFORMATION THIS PRODUCT IS NO MORE THAN SLIGHTLY TOXIC IF SWALLOWED.

SIGNS AND SYMPTOMS
IRRITATION AS NOTED ABOVE.

AGGRAVATED MEDICAL CONDITIONS
PREEXISTING SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

	OSHA		ACGIH		OTHER
NO.	PEL/TWA	PEL/CEILING	TLV/TWA	TLV/STEL	
P	5 MG/M3*	NONE	5 MG/M3*	10 MG/M3*	NONE

*OIL MIST, MINERAL

SECTION V EMERGENCY AND FIRST AID PPOCEDUPEE

EYE CONTACT
FLUSH WITH WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT
REMOVE CONTAMINATED CLOTHING AND WIPE EXCESS OFF. WASH WITH SOAP AND WATER OR A WATERLESS HAND CLEANER FOLLOWED BY SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION.

INHALATION
REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

INGESTION
DO NOT INDUCE VOMITING. IN GENERAL NO TREATMENT IS NECESSARY UNLESS LARGE QUANTITIES OF PRODUCT ARE INGESTED. HOWEVER, GET MEDICAL ADVICE.

NOTE TO PHYSICIAN
IN GENERAL, EMESIS INDUCTION IS UNNECESSARY IN HIGH VISCOSITY, LOW VOLATILITY PRODUCTS, I.E., MOST OILS AND GREASES.

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

NONE IDENTIFIED.

SECTION VII PHYSICAL DATA

BOILING POINT: NOT AVAILABLE (DEG F)

SPECIFIC GRAVITY: 0.9094 (H2O=1)

VAPOR PRESSURE: NOT AVAILABLE (MM HG)

MELTING POINT: 5 (POUR POINT) (DEG F)

SOLUBILITY: NEGLIGIBLE (IN WATER)

VAPOR DENSITY: NOT AVAILABLE (AIR=1)

PORATION RATE (N-BUTYL ACETATE = 1): NOT AVAILABLE

VISCOSITY: 370 (CS @ 40 DEG C)

APPEARANCE AND ODOR:
BROWN LIQUID. SLIGHT HYDROCARBON ODOR.

SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD:
356 DEG F (COC)

FLAMMABLE LIMITS /% VOLUME IN AIR
LOWER: N/AV UPPER: N/AV

EXTINGUISHING MEDIA
USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS
MATERIAL WILL NOT BURN UNLESS PREHEATED. DO NOT ENTER CONFINED FIRE-SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE-PRESSURE NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

SECTION IX REACTIVITY

STABILITY: STABLE HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:
AVOID HEAT, OPEN FLAMES AND OXIDIZING MATERIALS.

HAZARDOUS DECOMPOSITION PRODUCTS
THERMAL DECOMPOSITION PRODUCTS ARE HIGHLY DEPENDENT ON THE COMBUSTION CONDITIONS. A COMPLEX MIXTURE OF AIRBORNE SOLID, LIQUID, PARTICULATES AND GASES WILL EVOLVE WHEN THIS MATERIAL UNDERGOES PYROLYSIS OR COMBUSTION. CARBON MONOXIDE AND OTHER UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED UPON COMBUSTION.

SECTION X EMPLOYEE PROTECTION

RESPIRATORY PROTECTION
IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SECTION IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS AND PARTICULATES.

PROTECTIVE CLOTHING
WEAR CHEMICAL RESISTANT GLOVES AND OTHER PROTECTIVE CLOTHING AS REQUIRED TO MINIMIZE SKIN CONTACT. WEAR SAFETY GOGGLES TO AVOID EYE CONTACT. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE BEST PROTECTION IS PROVIDED BY NITRILE GLOVES.

SECTION XI ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES
MAY BURN ALTHOUGH NOT READILY IGNITABLE. USE CAUTIOUS JUDGMENT WHEN CLEANING UP LARGE SPILLS. *** LARGE SPILLS *** WEAR RESPIRATOR AND PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACCUM TRUCKS OR PUMP TO STORAGE SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND, OR OTHER SUITABLE MATERIALS; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY.

SECTION XII SPECIAL PRECAUTIONS

MINIMIZE SKIN CONTACT. WASH WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES. LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. PROPERLY DISPOSE OF CONTAMINATED LEATHER ARTICLES, INCLUDING SHOES, THAT CANNOT BE DECONTAMINATED. STORE IN A COOL, DRY PLACE WITH ADEQUATE

VENTILATION. KEEP AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.

SECTION XIII TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
NOT HAZARDOUS BY D.O.T. REGULATIONS

SECTION XIV OTHER REGULATORY CONTROLS

THE COMPONENTS OF THIS PRODUCT ARE LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE EDS SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV STATE REGULATORY INFORMATION

THE FOLLOWING CHEMICALS ARE SPECIFICALLY LISTED BY INDIVIDUAL STATES; OTHER PRODUCT SPECIFIC HEALTH AND SAFETY DATA IN OTHER SECTIONS OF THE MSDS MAY ALSO BE APPLICABLE FOR STATE REQUIREMENTS. FOR DETAILS ON YOUR REGULATORY REQUIREMENTS YOU SHOULD CONTACT THE APPROPRIATE AGENCY IN YOUR STATE.

STATE LISTED COMPONENT	PERCENT	STATE CODE
SOL. REF., HYDROTREATED, ACID TREATED HEAVY NAPHTHENIC DIST. (CAS NO: 64742-18-3)	0-15	MA

CA = CALIFORNIA HAZ. SUBST. LIST; CA65 = CALIFORNIA SAFE DRINKING WATER AND TOXICS ENFORCEMENT ACT LIST; FL = FLORIDA SUBST. LIST; IL = ILLINOIS TOX. SUBST. LIST; MA = MASSACHUSETTS SUBST. LIST; ME = MAINE HAZ SUBST. LIST; MN = MINNESOTA HAZ. SUBST. LIST; NJ = NEW JERSEY HAZ. SUBST. LIST; PA = PENNSYLVANIA HAZ. SUBST. LIST; RI = RHODE ISLAND HAZ. SUBST. LIST.

SECTION XVI SPECIAL NOTES

REVISIONS IN SECTIONS II, VII, VIII, XV, AND EDS.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: MAY 23, 1991

G. A. VAN GELDER

BE SAFE

READ OUR PRODUCT
SAFETY INFORMATION ...AND PASS IT ON
(PRODUCT LIABILITY LAW
REQUIRES IT)

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
P. O. BOX 4320
HOUSTON, TX 77210

REPORT NUMBER: 703
MSDS NO: P1166

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

See also: Mineral oil, technical

ORDER NO: 152599
PROD NO : 303624

HT HOOD CHEMICAL CORP.
4444 N.W. YEON AVENUE

PORTLAND ,OR 97210

VAN WATERS & ROGERS , SUBSIDIARY OF UNIVAR (408)435-8700
1600 NORTON BUILDING , SEATTLE , WA 98104

EMERGENCY ASSISTANCE

FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC
(800)424-9300

FOR PRODUCT AND SALES INFORMATION

CONTACT YOUR LOCAL VAN WATERS & ROGERS BRANCH OFFICE AT
VW&R PORTLAND OFFICE 503-222-1721 PORTLAND , OR

PRODUCT IDENTIFICATION

PRODUCT NAME: White Mineral Oil, USP/NF CAS NO.: 8042-47-5

COMMON NAMES/SYNONYMS: Sontex, Drakeoil, Parol, Penreteck, Arcoprime (TM), Amoco White Oil No. 8-T, 6970 Penreco, 5, White Blandol, Mineral Oil NF70, Clantex Resi-dew Oil, Super Crease NIB Oil, Kaydol (R) HSDS #: P1166

FORMULA: Undefined DATE ISSUED: 04/91

MOLECULAR WEIGHT: No Data Available SUPERCEDES: 02/91

EMERGENCY OVERVIEW

NFPA RATING (Manufacturer) HMIS HAZARD RATING

HEALTH: 0 HAZARD RATING SCALE HEALTH: 0

REPORT NUMBER: 703 VAN WATERS & ROGERS INC. PAGE: 002
MSDS NO: P1166 MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

FIRE: 1
REACTIVITY: 0
SPECIAL: None

0 = MINIMAL 3 = SERIOUS
1 = SLIGHT 4 = SEVERE
2 = MODERATE

FIRE: 1
REACTIVITY: 0

Protective equipment can only be assigned on a case by case basis.

****

HAZARDOUS INGREDIENTS

****

COMPONENT	CAS No.	% Wt.	EXPOSURE LIMITS, MG/M3 OSHA PEL	ACGIH TLV	OTHER LIMIT	HAZARD
Mineral Oil	8042-47-5	>99	5 Oil Mist	5 Oil Mist	10 OSHA ACGIH Stel Oil Mist	None

(TM) Trademark of Arco Petroleum Products Company.

(R) Trademark of Witco

****

HEALTH HAZARD INFORMATION

****

PRIMARY ROUTES OF EXPOSURE: Skin or eye contact, inhalation.

SIGNS AND SYMPTOMS OF EXPOSURE

INHALATION: None currently known.

E CONTACT: None currently known.

REPORT NUMBER: 709
MSDS NO: P1166

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

SKIN CONTACT: None currently known.

SWALLOWED: May act as a laxative.

CHRONIC EFFECTS OF EXPOSURE: No specific information avatlable.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None reported.

****

FIRST AID MEASURES

****

IF INHALED: Remove to fresh air. Give artificial respiration if not breathing. Get immediate medical attention.

CASE OF EYE CONTACT: Immediately flush eyes with lots of running water for 15 minutes, lifting the upper and lower eyelids occasionally. Get immediate medical attention.

IN CASE OF SKIN CONTACT: Immediately wash skin with lots of soap and water Remove contaminated clothing and shoes; wash before reuse. Get medical attention if irritation persists after washing.

IF SWALLOWED: Do not induce vomiting. If conscious, give lots of water or milk. Get immediate medical attention. Do not give anything by mouth to an unconscious or convulsing person.

Notes to Physician: None

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FIRE AND EXPLOSION INFORMATION

****

FLASH POINT, DEG. F: 400-420
METHOD USED: COC

FLAMMABLE LIMIT

OEL: No Data Available

LEL: No Data Available

AUTOIGNITION TEMPERATURE: NDA

EXTINGUISHING MEDIA: Use dry chemical, CO2, or alcohol foam. Do not use

water to fight fire.

SPECIAL FIRE FIGHTING PROCEDURES: Fire-fighter should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool nearby containers and structures exposed to fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

HAZARDOUS REACTIVITY

STABILITY: Stable POLYMERIZATION: Will not occur

CONDITIONS TO AVOID: None

MATERIALS TO AVOID: Oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: May liberate carbon monoxide or carbon dioxide.

SPILL, LEAK, AND DISPOSAL PROCEDURES

ACTION TO TAKE FOR SPILLS OR LEAKS: Wear protective equipment including impervious boots, impervious gloves, impervious apron, and a self-contained breathing apparatus in the pressure demand mode or a supplied-air respirator. If the spill or leak is small, a full face piece air-purifying cartridge respirator equipped for organic vapors may be satisfactory. In any event,
always wear eye protection. For small spills or drips, mop or wipe up and dispose of in DOT-approved waste containers. For large spills, contain by diking with soil or other non-combustible absorbent materials, and then pump into DOT-approved waste containers, or absorb with non-combustible sorbent material, place residue in DOT-approved waste containers. Keep out of sewer storm drains, surface waters, and soil.

Comply with all applicable governmental regulations on spill reporting, and handling and disposal of waste.

REPORT NUMBER: 703 VAN WATERS & ROGERS INC. PAGE: 005
MSDS NO: P1166 MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

DISPOSAL METHODS: Dispose of contaminated product and materials used in cleaning up spills or leaks in a manner approved for this material. Consult appropriate Federal, State and Local regulatory agencies to ascertain proper disposal procedures.

NOTE: Empty containers can have residues, gases and mists and are subject to proper waste disposal, as above.

****

PERSONAL PROTECTION

****

VENTILATION: General room ventilation; however, if vapor or mist is generated when the material is heated or handled, adequate ventilation in accordance with good engineering practice must be provided to maintain concentrations below the specified exposure or flammable limits.

RESPIRATORY PROTECTION: If use conditions generate vapors or mists, wear a NIOSH-approved respirator appropriate for those emission levels. Appropriate respirators may be a full face piece or a half-mask air-purifying cartridge respirator equipped for organic vapors/mists, a self-contained breathing apparatus in the pressure demand mode, or a supplied-air respirator.

EYE PROTECTION: Eye protection is not required under conditions of normal use. If material is handled such that it could be splashed into eyes, wear Chemical goggles or full face shield. It is generally recognized that contact lenses should not be worn when working with chemicals because contact lenses may contribute to the severity of any eye injury.

PROTECTIVE CLOTHING: None required; however use of impervious boots, gloves and apron is required for prolonged or repeated exposures.

OTHER PROTECTIVE MEASURES: An eyewash and safety shower should be nearby and ready for use.

****

REPORT NUMBER: 703 VAN WATERS & ROGERS INC. PAGE: 006
MSDS NO: PI166 MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

SPECIAL PRECAUTIONS

****

STORAGE AND HANDLING PRECAUTIONS: Store in a cool, dry, well-ventilated place away from incompatible materials. Keep container tightly closed when not in use. Do not use pressure to empty container. Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Keep away from heat sparks, open flame or oxidizers.

REPAIR AND MAINTENANCE PRECAUTIONS: None

OTHER PRECAUTIONS: This product is intended for use in food, animal feed, drug or cosmetic manufacture and it has been produced and packaged in accordance with strict quality practices. Maintain this quality level by storing this product away from other chemicals, handling it with care, and avoiding all sources of contamination.

Containers, even those that have been emptied, will retain product residue and vapors. Always obey hazard warnings and handle empty containers as if they were full.

****

PHYSICAL PROPERTIES

****

BOILING POINT, DEG F.: IBP >540

MELTING POINT, DEG F.: No Data Available

SPECIFIC GRAVITY (WATER = 1): 0.82 - 0.88 pH: No Data Available

VAPOR PRESSURE mm Hg/20 deg. C: <1 WATER SOLUBILITY %: Insoluble

VAPOR DENSITY (AIR = 1): No Data Available

EVAPORATION RATE (BUTYL ACETATE = 1): <1

% VOLATILE (by VOLUME): 0

APPEARANCE AND ODOR: Clear, transparent liquid, odorless.

REPORT NUMBER: 703 VAN WATERS & ROGERS INC. PAGE: 007
MSDS NO: P1166 MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

****

TOXICITY DATA

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ORAL: (Rats) LD50 = 5 g/kg

DERMAL: (Rabbit) LD50 = 2 g/kg

INHALATION: No Data Available

CARCINOGENICITY: This material is not considered to be a carcinogen by the National Toxicology Program, the International Agency for Research on Cancer or OSHA.

OTHER DATA: None

****

ECOLOGICAL INFORMATION

****

No Data Available

****

OTHER REGULATORY INFORMATION

****

SECTION 313: NONE

PROPOSITION 65: NONE

SECTION 313 & PROP. 65: NONE

SECTION 313 (WITH CHEMICALS LISTED): NONE

PROPOSITION 65 (WITH CHEMICALS LISTED): NONE

MASSACHUSETTS: NONE

REPORT NUMBER: 703
MSDS NO: P1166

VAN WATERS & ROGERS INC.
MATERIAL SAFETY DATA SHEET

VERSION: 01S White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

PENNSYLVANIA: NONE

CALIFORNIA SCAQMD:

VOC: No Data Available VAPOR PRESSURE: <1 mm Hg @ 70F

TSCA: The ingredients of this product are on the TSCA inventory.

****

NOTICE

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****

REVISIONS

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01/90: Added synonyms, HMIS hazard Rating, autoignition temp, pH, % volatile, Ecological Information, VOC, Vapor Pressure, TSCA.

02/90: Added synonym.

REPORT NUMBER: 703
MSDS NO: P1166

VAN WATERS & ROGERS INC,
MATERIAL SAFETY DATA SHEET

VERSION: 013 White Mineral Oil, USP/NF EFFECTIVE DATE: 05/03/91

ORDER NO: 152599
PROD NO : 303624

02/91: Added: synonym, trademark

04/91: Revised: flash point, hmis rating, health rating, pel, tlv, other limit, spill, eye protection, protective clothing.

Added: ventilation

---FOR ADDITIONAL INFORMATION ---

CONTACT: MSDS COORDINATOR VW&R PORTLAND OFFICE
DURING BUSINESS HOURS, PACIFIC TIME (405)435-8700

05/09/91 06:24 PRODUCT: 303624 COST NO: 107665 ORDER NO: 152599

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* * * E N D O F M S D S * * *

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44R1357

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
BOSTIK DIVISION, EMHART CHEMICAL GROUP	(617) 777-0100

ADDRESS (Number, Street, City, State, and ZIP Code)
Boston Street, Middleton, MA 01949

CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS
	Never-Seez

CHEMICAL FAMILY	FORMULA
Anti-Seize and Lubricating Compound	

SECTION II - HAZARDOUS INGREDIENTS

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES		%	TLV (Units)
Copper Powder	CAS 7440-50-8	10-22	1mg/m^3
Graphite Powder	CAS 7782-42-5	15-25	15mppcf

SECTION III - PHYSICAL DATA

BOILING POINT (°F.)	N/A	SPECIFIC GRAVITY (H_2O=1)	1.26
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	0
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (_____ =1)	N/A
SOLUBILITY IN WATER	Negligible		
APPEARANCE AND ODOR	An odorless dark silver colored paste.		

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel	Uel
500°F Open Cup		N/A	N/A

EXTINGUISHING MEDIA
Foam, Carbon Dioxide, Dry Chemical

SPECIAL FIRE FIGHTING PROCEDURES
Air supplied mask. Procedure for chemical fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS
None

(Continued on reverse side)

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: Not Established

EFFECTS OF OVEREXPOSURE: None known to us at this time.

EMERGENCY AND FIRST AID PROCEDURES:
Skin Contact: Wipe off immediately. Wash with soap and water. Flush with water.
Eye Contact: Wash out immediately with a large volume of water (15 min.). Consult a physician.

SECTION VI - REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY (Materials to avoid): Liquid and gaseous oxygen, acetylene and ammonia, strong acids, sulfur.

HAZARDOUS DECOMPOSITION PRODUCTS: on burning emits carbon monoxide, carbon dioxide and other toxic fumes depending on combustion conditions.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Material is not pourable. If dropped it can be cleaned with standard solvents.

WASTE DISPOSAL METHOD:
Dispose of in accordance with Federal, State and Local environmental regulations.

SECTION VIII - SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (Specify type): None required.

VENTILATION	LOCAL EXHAUST: Preferred	SPECIAL
	MECHANICAL (General): not required unless usage leads to decomposition causing fumes or mist	OTHER

PROTECTIVE GLOVES: Disposable Gloves	EYE PROTECTION: Safety Glasses

OTHER PROTECTIVE EQUIPMENT: Safety Shower and Eye Bath

SECTION IX - SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Avoid skin contact.

OTHER PRECAUTIONS:

Date: 11/14/85

BOSTIK DIVISION
EMHART CHEMICAL GROUP
Richard A. Weidman, Dir. of Development

Form OSHA-20
Rev. May 76

U.S. DEPARTMENT OF LABOR
Occupational Safety and Health Administration

Form Approved
OMB No. 44-R1387

MATERIAL SAFETY DATA SHEET

Required under USDL Safety and Health Regulations for Ship Repairing, Shipbuilding, and Shipbreaking (29 CFR 1915, 1916, 1917)

SECTION I

MANUFACTURER'S NAME	EMERGENCY TELEPHONE NO.
EMHART FASTENING BOSTIK INDUSTRIAL DIVISION, SYSTEMS GROUP	617/777-0100
ADDRESS (Number, Street, City, State, and ZIP Code) Boston Street, Middleton, MA 01949	
CHEMICAL NAME AND SYNONYMS	TRADE NAME AND SYNONYMS NEVER-SEEZ REGULAR AEROSOL CANS
CHEMICAL FAMILY ANTI-SEIZE COMPOUND IN AEROSOL CANS	FORMULA

SECTION II – HAZARDOUS INGREDIENTS (OSHA 1910.1200)

PAINTS, PRESERVATIVES, & SOLVENTS	%	TLV (Units)	ALLOYS AND METALLIC COATINGS	%	TLV (Units)
PIGMENTS			BASE METAL		
CATALYST			ALLOYS		
VEHICLE			METALLIC COATINGS		
SOLVENTS			FILLER METAL PLUS COATING OR CORE FLUX		
ADDITIVES			OTHERS		
OTHERS					

HAZARDOUS MIXTURES OF OTHER LIQUIDS, SOLIDS, OR GASES			%	TLV (Units)
Copper Powder	CAS 7440-50-8		5.2	0.2mg/m³
Synthetic Graphite	CAS 7782-42-5		7.8	
Methylene Chloride	CAS 75-09-2	TLV for Vapors is 108.8 rpm	61.3	100 ppm
Carbon Dioxide	CAS 124-38-9	TLV for Dust is 0.2 mg/m³	3.5	5500 ppm

SECTION III – PHYSICAL DATA

BOILING POINT (°F.)	-110-104	SPECIFIC GRAVITY (H_2O=1)	1.75
VAPOR PRESSURE (mm Hg.)	N/A	PERCENT, VOLATILE BY VOLUME (%)	65.7
VAPOR DENSITY (AIR=1)	N/A	EVAPORATION RATE (Ethyl Ether =1)	N/A
SOLUBILITY IN WATER	None		
APPEARANCE AND ODOR	Dark silver colored paste with a sharp transient solvent odor.		

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (Method used)	FLAMMABLE LIMITS	Lel N/A	Uel N/A

EXTINGUISHING MEDIA: Water Spray, Foam, Dry Chemical or Carbon Dioxide

SPECIAL FIRE FIGHTING PROCEDURES:

UNUSUAL FIRE AND EXPLOSION HAZARDS: Aerosol cans must be kept at temperatures below 130°F to prevent any potential explosion hazard.

(Continued on reverse side)

SECTION V — HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE

EFFECTS OF OVEREXPOSURE Ingestion: Hazardous if ingested. MSDS rating of component or has an Oral LD50 of 50 to 500 mg/kg. Absorption, corrosion: No hazard known at this time. Inhalation: Hazardous if inhaled. Has an LC50 of 200-2000 ppm (1 hr. exposure). Contact: Causes eye irritation. Flammability: N/A.

EMERGENCY AND FIRST AID PROCEDURES
Ingestion: Call a physician. Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. If breathing is difficult, give oxygen. Call a physician. Contact: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. None of the ingredients in this product are on the IARC, NTP or OSHA lists of carcinogenic hazards.

SECTION VI — REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	

INCOMPATABILITY *(Materials to avoid)* Oxidizing Materials

HAZARDOUS DECOMPOSITION PRODUCTS Unknown due to the complex nature of this material. Fumes from complete or incomplete combustion of this material may include carbon dioxide, carbon monoxide, water, vapor, oxides of nitrogen or a wide variety of innocuous or toxic fumes. If in aerosol form at the time of combustion, phosgene and hydrochloric acid fumes may be formed.

HAZARDOUS POLYMERIZATION	MAY OCCUR	
	WILL NOT OCCUR	X

SECTION VII — SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED
If liquid, soak up with absorbent material such as sand, earth, sweeping compound or some other absorbent material. Package absorbent material or solid product in steel drums which are in good condition. Thoroughly clean area where spill occurred.

WASTE DISPOSAL METHOD Dispose of in accordance with Federal, State and Local regulations. Be aware that state and local requirements may differ widely depending on location and in many cases be different from federal rules. Aerosol cans in particular must be disposed of in an environmentally acceptable manner due to their potential to present an explosion hazard. Contact your local environmental authority for instructions on disposal.

SECTION VIII — SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION *(Specify type)*

VENTILATION	LOCAL EXHAUST Preferred	SPECIAL
	MECHANICAL *(General)*	OTHER

PROTECTIVE CLOVES Impervious plastic	EYE PROTECTION Safety glasses or full face shield

OTHER PROTECTIVE EQUIPMENT Safety shower and eye bath

SECTION IX — SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING
Store in a cool location (60-80°F) away from sunlight and any source of heat, sparks or flame. Keep container tightly closed when not being used.

OTHER PRECAUTIONS
Use with adequate ventilation. Avoid prolonged or repeated breathing of vapors. Avoid skin contact. Use in an area free from flame and sparks.

Date: 2/19/86

BOSTIK INDUSTRIAL DIVISION
EMHART FASTENING SYSTEMS GROUP

Dr. Conrad Rossitto
Manager of Technical Development

ITEM: 5A268 - PAINT SAFETY BLUE 1 G

PICK_REQ: 1008217729 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A5708**

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A5708

Associated Grainger Item: 5A268 - PAINT SAFETY BLUE 1 G

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SAFETY BLUE 9906306

IDENTIFICATION NUMBER: 0925 402

DATE PRINTED: 04/24/03

PRODUCT USE/CLASS: INDUSTRIAL ENAMEL

SUPPLIER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS 60061
USA
(847) 367-7700 RUST-OLEUM CORP.
8:00 AM-4:30 PM/24-HR EMER.ASSIST

MANUFACTURER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS 60061
USA
(847) 367-7700 RUST-OLEUM CORP.
8:00 AM-4:30 PM/24-HR EMER.ASSIST

PREPARER: MIM

PHONE: 847-816-2226

PREPARE DATE: 04/24/03

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	PETROLEUM DISTILLATES	64742-47-8	35.0%
02	STODDARD SOLVENT	8052-41-3	15.0%
03	TITANIUM DIOXIDE	13463-67-7	5.0%
04	MIXED COBALT CARBOXYLATES	NOT AVAILABLE	1.0%

EXPOSURE LIMITS:

	ACGIH		OSHA		MEXICAN	
ITEM	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	N.E.	N.E.	N.E.	N.E.	N.E.	YES
02	100 PPM	N.E.	100 PPM	N.E.	100 PPM	NO
03	10 MG/M3	N.E.	15 MG/M3	N.E.	N.E.	NO
04	N.E.	N.E.	N.E.	N.E.	N.E.	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
CAUSES EYE IRRITATION. VAPORS IRRITATING TO EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF INHALED. MAY EFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION:
HARMFUL IF INHALED. MAY CAUSE HEADACHES AND DIZZINESS. HIGH VAPOR CONCENTRATIONS ARE IRRITATING TO THE EYES, NOSE, THROAT AND LUNGS.

EFFECTS OF OVEREXPOSURE - INGESTION:
SUBSTANCE MAY BE HARMFUL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:
REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. CONTAINS A COBALT COMPOUND. IARC LISTS COBALT AND COBALT COMPOUNDS AS AS POSSIBLE HUMAN CARCINOGENS (GROUP 2B). HOWEVER, THERE IS INADEQUATE EVIDENCE OF THE CARCINOGENICITY OF COBALT AND COBALT COMPOUNDS IN HUMANS AND LIMITED EVIDENCE IN EXPERIMENTAL ANIMALS.

PRIMARY ROUTE(S) OF ENTRY:
SKIN ABSORPTION
INHALATION
EYE CONTACT

SECTION 4 - FIRST AID MEASURES

FIRST AID - EYE CONTACT:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.

FIRST AID - SKIN CONTACT:
WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - INHALATION:
REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION:
ASPIRATION HAZARD:
DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. GET IMMEDIATE MEDICAL ATTENTION.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: 104 F (SETAFLASH CLOSED CUP)

LOWER EXPLOSIVE LIMIT: 0.6%
UPPER EXPLOSIVE LIMIT: 6.5%

AUTOIGNITION TEMPERATURE: NE

EXTINGUISHING MEDIA:
DRY CHEMICAL
FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.

SPECIAL FIREFIGHTING PROCEDURES:
WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILDUP AND POSSIBLE AUTOIGNITION OR EXPLOSION. EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

SECTION 5 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
CONTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. DISPOSE OF ACCORDING TO LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

SECTION 7 - HANDLING AND STORAGE

HANDLING:
WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES. AVOID BREATHING VAPOR OR MIST. AVOID CONTACT WITH EYES.

STORAGE:
KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. KEEP AWAY FROM HEAT, SPARKS, FLAME AND SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION:
USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL
THROUGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION.

EYE PROTECTION:
USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT:
REFER TO SAFETY SUPERVISOR OR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

HYGIENIC PRACTICES:
WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE: 318 - 383 F

VAPOR DENSITY: IS HEAVIER THAN AIR

ODOR: SOLVENT

ODOR THRESHOLD: NE

APPEARANCE: LIQUID

EVAPORATION RATE: IS SLOWER THAN ETHER

SOLUBILITY IN H2O: INSOLUBLE

FREEZE POINT: ND

SPECIFIC GRAVITY: 0.9430

VAPOR PRESSURE: ND

pH @ 0.0 %: ND

PHYSICAL STATE: LIQUID

VISCOSITY: >100 SUS

COEFFICIENT OF WATER/OIL DISTRIBUTION: NE

(SEE SECTICN 16 FOR ABBREVIATION LEGEND)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY:
INCCMPATTBLE WITO STRONG OXIDIZING AGENTS, STRCNG ACIDS AND STRCNG ALKALIES.

HAZARDOUS DECOMPOSITION PRODUCTS:
BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE. WHEN HEATED TO DECOMPOSITION IT EMITS ACRID SMOKE AND IRRITATING FUMES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

SECTION 11 - TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
PETROLEUM DISTILLATES	>5000 MG/KG	NO INFORMATION
STODDARD SOLVENT	4900 MG/KG(RAT)	N.E.
TITANIUM DIOXIDE	24000 MG/KG RATS	6820 MG/M3 RATS
MIXED COBALT CARBOXYLATES	1200-1600 MG/KG RAT	>5.0 MG/L RAT

SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION:
PRODUCT IS A MIXTURE OF LISTED COMPONENTS. ACCORDING TO OUR RAW MATERIAL SUPPLIERS, ALL COMPONENTS ARE LISTED ON THE TSCA INVENTORY AS REQUIRED OR MEET THE POLYMER EXEMPTION AS DEFINED IN SECTION 5.5.2 OF THE TOXIC SUBSTANCES CONTROL ACT.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AND
ORDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

SECTION 14 - TRANSPORTATION INFORMATION

PROPER SHIPPING NAME: PAINT

DOT TECHNICAL NAME:

DOT HAZARD CLASS: 3
HAZARD SUBCLASS:

DOT UN/NA NUMBER: UN1263

PACKING GROUP: III

RESP. GUIDE PAGE: 127

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA:
HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:
THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA 'HAZARD CATEGORIES' PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:
IMMEDIATE HEALTH HAZARD
CHRONIC HEALTH HAZARD
FIRE HAZARD

SARA SECTION 313:
THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
MIXED COBALT CARBOXYLATES	NOT AVAILABLE	1.0%

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:
THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE COMPONENTS IN THIS PRODUCT:

CHEMICAL NAME	CAS NUMBER
ALKYD RESIN SOLUTION	66071-01-0
ALKYD RESIN SOLUTION	66070-60-8

SYLVANIA RIGHT-TO-KNOW:
THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

CHEMICAL NAME	CAS NUMBER
ALKYD RESIN SOLUTION	66071-01-0
ALKYD RESIN SOLUTION	66070-60-8

CALIFORNIA PROPOSITION 65:
WARNING:
THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

CHEMICAL NAME	CAS NUMBER
XYLENE	1330-20-7

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS:
THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS
EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS:
B3
D2B

SECTION 16 - OTHER INFORMATION

HMIS RATINGS -
HEALTH:
FLAMMABILITY:
REACTIVITY:

PREVIOUS MSDS REVISION DATE: 06/28/00

REASON FOR REVISION: WHMIS CLASS ADDITION

LEGEND:
N.A. - NOT APPLICABLE
N.E. - NOT ESTABLISHED
N.D. - NOT DETERMINED

: NO INFORMATION.

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

PRODUCT: 0925 402

PREPARATION DATE: 04/24/03

ORDER: 1008217729 ITEM: 5A268 - PAINT SAFETY BLUE 1 G HAZMAT: 5A268

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

****

GRAINGER SHIPPING INFORMATION

STOCK #	: 5A268
MSDS #	: A5708
FREIGHT CODE	: 0213
DOT PROPER SHIP NAME	: COMBUSTIBLE LIQUID, NOT REGULATED BY DOT AS A HAZARDOUS MATERIAL PER 49CFR 173.150(F)(2), FLASHPOINT 40 DGS C, 104
FLASHPOINT	: 40 DEGREES CELSIUS, 104 DEGREES FAHRENHEIT
UPS RESTRICTIONS	:
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	:
LIMITED QUANTITY	: NO
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
DOT/UPS EXEMPTION NO.	:
COMMENTS	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!! ONLY ARROW UP LABEL (2S594) REQUIRED.
SHIPPING-PAPERS	:

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE

****

ITEM: 3BU16 - PRIMER METALLIC ZINC

PICK REQ: 1123450199 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A4945**

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A4945

Associated Grainger Item: 3BD1S - PRIMER METALLIC ZINC

MATERIAL SAFETY DATA SHEET

24 HOUR ASSISTANCE: 1-847-367-7700
RUST-OLEUM CORP.
WWW.RUSTOLEUM.CDM

SECTION 1 - CHEMICAL PRODUCT/COMPANY INFORMATION

PRODUCT NAME: COLD GALVANIZING COMPOUND

IDENTIFICATION NUMBER: 206193

PRODUCT USE/CLASS: COLD GALV COMPOUND - 1 GAL

SUPPLIER: RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, IL 60061
USA

PREPARER: NORWICH, DENNIS

REVISION DATE: 08/15/2002

MANUFACTURER: RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, IL 60061
USA

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS NUMBER	WEIGHT % LESS THAN
ZINC DUST	7440-66-6	85.0
STODDARD SOLVENTS	8052-41-3	10.0
ZINC OXIDE	1314-13-2	5.0
NAPHTHA	64742-47-8	5.0

CHEMICAL NAME	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING
ZINC DUST	10 M3/CU.M.	N.E.	N.E.	N.E.
STODDARD SOLVENTS	100 PPM	N.E.	100 PPM	N.E.
ZINC OXIDE	10 M3/M3	N.E.	10 MG/M3	N.E.
NAPHTHA	100 PPM	N.E.	N.E.	N.E.

SECTION 3 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
HARMFUL IF INHALED. MAY AFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. HIGH VAPOR CONCENTRATIONS CAN IRRITATE EYES, NOSE AND RESPIRATORY PASSAGES. CAUSES NOSE AND THROAT IRRITATION. FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT:
PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION:
MAY CAUSE HEADACHES AND DIZZINESS. AVOID BREATHING VAPORS OR MISTS. HARMFUL INHALED. HIGH VAPOR CONCENTRATIONS ARE IRRITATING TO THE EYES, NOSE, THROAT AND LUNGS.

EFFECTS OF OVEREXPOSURE - INGESTION:
HARMFUL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:
REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

PRIMARY ROUTE(S) OF ENTRY:
SKIN CONTACT, SKIN ABSORPTION, INHALATION, EYE CONTACT

SECTION 4 - FIRST AID MEASURES

FIRST AID - EYE CONTACT:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.

FIRST AID - SKIN CONTACT:
WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - INHALATION:
REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION:
ASPIRATION HAZARD: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. GET IMMEDIATE MEDICAL ATTENTION.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: 95 F (SETAFLASH)

LOWER EXPLOSIVE LIMIT: 0.9 %
UPPER EXPLOSIVE LIMIT: 7.0 %

EXTINGUISHING MEDIA: DRY CHEMICAL, FOAM, WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS:
VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. VAPORS CAN TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME.

SPECIAL FIREFIGHTING PROCEDURES:
EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE. WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILDUP AND POSSIBLE AUTOIGNITION OR EXPLOSION.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:
ELIMINATE ALL IGNITION SOURCES; USE EXPLOSION-PROOF EQUIPMENT. PLACE MATERIAL IN A CONTAINER AND DISPOSE OF ACCORDING TO LOCAL, PROVINCIAL, STATE AND FEDERAL REGULATIONS. CONTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST.

SECTION 7 - HANDLING AND STORAGE

HANDLING:
FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE MAY RETAIN PRODUCT RESIDUES. USE WITH ADEQUATE VENTILATION. WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING.

STORAGE:
KEEP AWAY FROM HEAT, SPARKS, FLAME AND SOURCES OF IGNITION. KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION:
A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION. A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE.

SKIN PROTECTION:
NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION. USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL THROUGH THE SKIN.

EYE PROTECTION:
USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT:
REFER TO SAFETY SUPERVISOR OR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

HYGIENIC PRACTICES:
WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE: 231 - 999 F

ODOR: SOLVENT

APPEARANCE: GRAY LIQUID

SOLUBILITY IN H2O: NONE

FREEZE POINT: ND

VAPOR PRESSURE: ND

PHYSICAL STATE: LIQUID

VAPOR DENSITY: HEAVIER THAN AIR

ODOR THRESHOLD: NE

EVAPORATION RATE: SLOWER THAN ETHER

SPECIFIC GRAVITY: 3.394

pH: NE

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY:
INCOMPATIHLE WTIH SIRCN3 OXIDIZING AGENTS, SIRCN3 ACIDS AND SIRONG ALKALIES.

HAZARDOUS DECOMPOSITION:
WHEN HEATED TO DECOMPOSITICN IT EMTTS ACRID SNOKE AND IRRTTATING FINES. BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE.

HAZAREOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITICNS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

SECTION 11 - TOXICOLOGICAL INFORMATION

PRODUCT LD50:

PRODUCT LC50:

CHEMICAL NAME	LD50	LCSO
ZINC DUST	N.A.	N.A.
STODDARD SOLVENTS	4900 M3/KG (RAT)	N.E.
ZINC OXIDE	N.A.	N.A.
NAIHIHA	>2S ML/KG (RAT)	>700 PPM-4 HR (RAT)

SECTION 12 - ECOLOGICAL INFORHATICN

ECOLOGICAL INFORMATION: PRODUCT IS A MIXTURE OF LISTED OCMPQNENTS.

SECTION 13 - DISPOSAL INFORHATIOH

DISPOSAL INPORMATICN:
DISPOSE OF MATERIAL UN ACCORDANCE TO LOCAL, SIDIE AND FEDERAL REGULATIONS AND ORDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

SECTION 14 - TRANSFORTATION INFORMATION

DOT PROPER SHIPPING NAME: PAINT

DOT TECHNICAL NAME: -

DOT HAZARD CLASS: 3

DOT UN/NA NUMBER: 1263

PACKING GROUP: III

HAZARD SUBCLASS: -

RESP. GUIDE PAGE: 127

SECTION 15 - REGULATORY IMFORHATICH

CERCLA - SARA HAZARD CATEGORY:
T[illegible] PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA 'HAZARD CATEGORIES' [illegible]LSATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND [illegible]HORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLICWING CATEGORIES:
IMMEDIATE HEALTH HAZARD
CHRONIC HEALTH HAZARD
FIRE HAZARD

SARA SECTION 313:
LISTED BELOW ARE THE SUBSTANCES (IF ANY) CONTAINED IN THIS PRCOUCT THAT ARE SUBJECT TO THE REPORTING REQUIREMENTS OF SECTICN 313 OF TITLE III OF THE SUPERFUND AMENLMENT AND REAUTHORIZATICN ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME	CAS NUMBER
ZINC DUST	7440-66-6
ZINC OXIDE	1314-13-2

TOXIC SUBSTANCES OCNTROL ACT:
LISTED BELOW ARE THE SUBSTANCES (IF ANY) CENIAINED IN THIS PRODOCT THAT ARE SUBJECT TO THE REPCRTING RBQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITTED STATES:

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNCW:
THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BOT ARE AMONG THE TOP FIVE COMPONENTS IN THIS PRODUCT.

CHEMICAL NAME	CAS NUMBER
EPOXY ESTER RESIN	66070-75-5

PENNSYLVANIA RIGHT-TO-KNOW:
THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

CHEMICAL NAME	CAS NUMBER
EPOXY ESTER RESIN	66070-75-5

CALIFORNIA PROPOSITION 65:
WARNING: THE FOLLOWING DNOREDIENTS PRESENT IN THE PRODUCT ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER:

CHEMICAL NAME	CAS NUMBER
SILICON DIOXIDE (QUARTZ)	14808-60-7

WARNING:
THE FOLLOWING INGREDIENTS PRESENT IN THE PRODOCT ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS, OR OTHER REPRODUCTIVE HAZARDS.

CHEMICAL NAME	CAS NUMBER
TOLUENE	108-88-3

INTERNATIONAL REGULATIONS: AS FOLLCWS -

C[illegible]DIAN WHMIS:
[illegible] MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT [illegible]ATICNS EXCEPT FOR THE USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: B2 D2B

SECTION 16 - OTHER INFORMATION

HMIS RATINGS:
HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 0
PERSONAL PROTECTION: X

VOLATILE ORGANIC OCMPOUNDS, G/L: 357

REASON FOR REVISION:

LEGEND:
N.A. - NOT APPLICABLE
N.E. - NOT ESTABLISHED
N.D. - NOT DETERMINED

THE INFORMATION CONTAINED CN THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESECNSIBILITY OF THE USER TO COMPLY WITH AL FEDERAL, SIATE, AND LOCAL LAWS AND REGULATIONS.

ORDER: 1123450199 **ITEM: 3BU16 - PRIMER METALLIC ZINC** **HAZMAT: 3BU16**

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

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**********************************************************************
GRAINGER SHIPPING INFORMATION
STOCK #                 : 3BU16
MSDS  #                 : A4945
FREIGHT CODE            : 0893
DOT PROPER SHIP NAME    : CONSUMER COMMODITY, ORM-D
                          FLASHPOINT 35 DGS C, 95 DGS F



UPS RESTRICTIONS        : 20 LB. & UNDER REQUIRES 200 LB. BSC/32 ECT,
                          21 LB. & OVER REQUIRES 275 LB. BSC/44 ECT.
HAZARDOUS CLASS NUMBER  :
UN ID #                 :
PACKING GROUP           :
SHIPPING LABEL          : ORM-D
                        :
LIMITED QUANTITY        : Y
CARTON INSTRUCTIONS     : CAN REPACK IN GRAINGER S CARTON
EXCEPTION               :
DOT/UPS EXEMPTION NO.   :
COMMENTS 1              : HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2              :
SHIPPING-PAPERS         : AUTOMATED BILL OF LADING REQUIRED FOR TRUCK SHIPMENTS.
PLACARD OFFERED ?  YES ( )     NO ( )    PLEASE MARK ONE
ERG TO ACCOMPANY SHIPMENT

**********************************************************************
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MATERIAL SAFETY DATA SHEET

RODUCT NAME: 1892 WHITE GLOSS LATEX HMIS CODES: H F R P
PRODUCT CODE: 1892 1 0 0 B
PREPARED FOR: TRADE PRODUCTS-IMPERIAL

SECTION I - MANUFACTURER IDENTIFICATION

MANUFACTURER'S NAME: IMPERIAL PAINT COMPANY
ADDRESS: 2526 N.W. YEON AVENUE, PORTLAND, OR 97210
EMERGENCY PHONE: CHEMTREC800-424-9300 INFORMATION PHONE: 503-228-0208
DATE REVISED : 01-25-93 NAME OF PREPARER : SFR

SECTION II - HAZARDOUS INGREDIENTS/SARA III INFORMATION

HAZARDOUS COHPONENTS	CAS NUMBER	OCCUPATIONAL EXPOSURE LIMITS OSHA PEL	OCCUPATIONAL EXPOSURE LIMITS ACGIH TLV	VAPOR PRESSURE mm Hg @ TEMP	WEIGHT PERCENT

*** NO REPORTABLE QUANTITIES OF HAZARDOUS INGREDIENTS ARE PRESENT ***

*** No toxic chemical(s) subject to the reporting requirements of section 313 of Title III and of 40 CFR 372 are present. ***
WARNING: DETECTABLE AMOUNTS OF A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND/OR BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM MAY BE PRESENT IN THIS PRODUCT.

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING RANGE: N/A SPECIFIC GRAVITY (H2O=1): 1.3
VAPOR DENSITY: HEAVIER THAN AIR EVAPORATION RATE: SLOWER THAN ETHER
COATING V.O.C. : 1.06 LB/GL (127 G/L)
MATERIAL V.O.C.: 0.48 LB/GL (58 G/L)
SOLUBILITY IN WATER: YES
APPEARANCE AND ODOR: VISCOUS LIQUID, TYPICAL ODOR OF SOLVENT(s) LISTED ABOVE

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A
FLAMMABLE LIMITS IN AIR BY VOLUME- LOWER: N/A UPPER: N/A

EXTINGUISHING MEDIA: FOAM, ALCOHOL FOAM, CO2, DRY CHEMICAL, WATER FOG

SPECIAL FIREFIGHTING PROCEDURES
WATER SPRAY HAY BE INEFFECTIVE. WATER SPRAY HAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILD-UP AND POSSIBLE RUPTURE OF CONTAINERS. WATER FOG IS PREFERRED. FIRE FIGHTERS SHOULD WEAR SELF CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS
CLOSED CONTAINERS HAY EXPLODE OR BURST, DUE TO THE BUILD UP OF STEAM PRESSURE WHEN EXPOSED TO EXTREME HEAT.

SECTION V - REACTIVITY DATA

STABILITY: STABLE
CONDITIONS TO AVOID
NONE

INCOMPATIBILITY (MATERIALS TO AVOID)
AVOID CONTACT WITH STRONG ALKALIES, STRONG MINERAL ACIDS OR STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS
DRY MATERIAL EXPOSED TO HIGH HEAT SUCH AS WELDING OR FLAME-CUTTING OPERATIONS MAY RELEASE CARBON MONOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

SECTION VI - HEALTH HAZARD DATA

INHALATION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
EFFECTS FROM VAPORS OR SPRAY MISTS IN POORLY VENTILATED AREAS HAY INCLUDE IRRITATION OF THE MUCUS MEMBRANES. INHALATION OF VAPORS OR SPRAY MISTS MAY ALSO RESULT IN NAUSEA, DIZZINESS, BREATHING DIFFICULTY, HEADACHES, AND LOSS OF COORDINATION

SKIN AND EYE CONTACT HEALTH RISKS AND SYMPTOMS OF EXPOSURE
SKIN CONTACT: HAY CAUSE SKIN IRRITATION OR SENSITIVITY. SYMPTOMS INCLUDE REDNESS, CRACKS, SWELLING, ANO DERHITIS.
EYE CONTACT:CAUSES SEVERE EYE IRRITATION. SYHPTOMS INCLUDE REDNESS, TEARING, BURNING, AND VISUAL DISTURBANCES.

KIN ABSORPTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. SYMPTOHS INCLUDE, NAUSEA, HEADACHE, IRRITATION, SWELLING, AND REDNESS.

INGESTION HEALTH RISKS AND SYMPTOMS OF EXPOSURE
HARMFUL OR FATAL IF SWALLOWED. SYMPTOMS INCLUDE GASTROINTESTINAL IRRITATION, NAUSEA, VOMITING, AND DIARRHEA.

HEALTH HAZARDS (ACUTE AND CHRONIC)
INHALATION-DIZZINESS, BREATHING DIFFICULTY, HEADACHES & LOSS OF COORDINATION. EYE CONTACT-SEVERE IRRITATION, TEARING, REDNESS, AND BLURRED VISION, SKIN CONTACT-CAN DRY AND DEFAT SKIN CAUSING CRACKS, IRRITATION, AND DERMATITIS. INGESTION-CAN CAUSE GASTROINTESTINAL IRRITATION, VOMITING, & DIARRHEA. CHRONIC EFFECTS UNKNOWN.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE
UNKNOWN.

EMERGENCY AND FIRST AID PROCEDURES
INGESTION: OD NOT INDUCE VOMITING. CAN CAUSE CHEMICAL PNEUMONITIS ANO PULMONARY EDEMA. CALL PHYSICAN OR EMERGENCY RESPONSE AGENCY IMMEDIATELY. EYE CONTACT: FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. SEEK MEDICAL ATTENTION. SKIN CONTACT: FLUSH WITH WATER FOLLOWED BY WASHING WITH SOAP AND WATER.
IHALATION: REMOVE VICTIM TO FRESH AIR. APPLY ARTIFICIAL RESPIRATION AND OTHER SUPPORTIVE MEASURES AS REQUIRED.
EK HEDICAL ATTENTION.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

STEPS TO BE TAKEH IN CASE MATERIAL IS RELEASED OR SPILLED

DIKE AND CONTAIN SPILL MITH INERT MATERIAL (SAND,EARTH, ETC.). TRANSFER LIQUID TO CONTAINERS FOR RECOVERY OR DISPOSAL. DO MOT ALLOH SPILLED MATERIAL TO ENTER DRAINS OR SEWER SYSTEHS.

WASTE DISPOSAL METHOD

DISPOSE OF MASTE IN STRICT ACCORDANCE HITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

KEEP FROM FREEZING. PRODUCT STABILITY MAY BE AFFECTED IF FROZEN. KEEP CONTAINER CLOSED WHEN NOT IN USE. SPILLS ON FLOORS HAY BE SLIPPERY, CARE SHOULD BE TAKEN TO AVOID FALLS. KEEP OUT OF THE REACH OF CHILDREN.

OTHER PRECAUTIONS

SINCE COHTAINERS OF THIS MATERIAL MAY CONTAIN RESIDUES (VAPOR, LIQUID OR SOLID)WHEN "EMPTY", ALL HAZARD PRECAUTIONS GIVEN IN THIS OATA SHEET MUST BE OBSERVED. READ AND UNDERSTAND SAFETY PRECAUTIONS BEFORE USING THIS PRODUCT. KEEP OLOSURE TIGHT AOD CONTAINER UPRIGHT TO PREVENT LEAKAGE. AVOID BREATHING SANDING DUST.

SECTION VIII - CONTROL MEASURES

RESPIRATORY PROTECTION

IN OUTDOOR OR OPEN AREAS HITH UNRESTRICTED VENTILATION USE APPROVED MECHANICAL FILTER RESPIRATOR TO REHOVE SOLID IRBORNE PARTICLES OF OVERSPRAY DURING APPLICATION. IF VENTILATION IS POOR WEAR NIOSH/HSHA TC 23C OR EQUIVALENT RESPIRATOR SUITABLE FOR VAPOR OR MIST CONCENTRATIONS ENCOUNTERED.

VENTILATION

PROVIOE SUFFICIENT NECHANICAL VENTILATION TO KEEP THE CONCENTRATION OF INGREDIENTS LISTED IN SECTION II BELOW THE LOWEST SUGGESTED EXPOSURE LIMITS.

PROTECTIVE GLOVES

GLOVES SHOULD BE CONSTRUCTED OF NITRILE, NEOPRENE, OR LATEX. OR IMPERVIOUS TO THE INGREDIENTS LISTED IN SECTION II.

EYE PROTECTION

USE CHEMICAL SAFETY GLASSES, GOGGLES OR FACESHIELDS FOR PROTECTION.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT

TO PREVENT REPEATED OR PROLONGED SKIN CONTACT, HEAR GLOVES, CLOTHING AND FOOTWEAR WHICH ARE DESIGNED FOR PROTECTION WHEN USING THIS MATERIAL.

WORK/HYGIENIC PRACTICES

HASH THOROUGHLY AFTER HANDLING. IF CLOTHING OR FOOTHEAR IS CONTAMINATED, DISCARD OR LAUNDER.

SECTION IX - DISCLAIMER

DISCLAIMER

THE ABOVE INFORMATION IS BASER ON TECHNICAL DATA WHICH THE SELLER BELIEVES TO BE RELIABLE AND ARE INTENDED FOR USE BY PERSONS HAVING PROPER SKILL AND KNOWLEDGE, AT THEIR DISCRETION AND RISK. SELLER ASSUMES NO RESPONSIBILITY FOR RESULTS OBTAINED OR DAMAGES INCURRED FROM THEIR USE BY BUYER WHETHER AS RECOMMENDED HEREIN OR OTHERWISE.

MATERIAL SAFETY DATA SHEET
FOR COATINGS, RESINS AND RELATED MATERIALS
(NPCA 1-84)

HMIS RATINGS	
HEALTH	3
FLAMMABILITY	3
REACTIVITY	0
PERSONAL PROTECTIVE EQUIPMENT	X

Section I—PRODUCT IDENTIFICATION

MANUFACTURER: **GAVLON INDUSTRIES, INC.**
9808 South I-35
Austin, Texas 78745
P. O. Box 17307
Austin, Texas 78760

EMERGENCY TELEPHONE NUMBER: (713) 466-3866
INFORMATION TELEPHONE NUMBER: (512) 282-1115

PRODUCT CLASS: Urethane Alkyd Enamel

MANUFACTURER'S CODE IDENTIFICATION: 510

DATE OF PREPARATION: 2-23-90
REVISION: 01-01-93

TRADE NAME: GAVLON 510 Enamel

Section II—HAZARDOUS INGREDIENTS

INGREDIENT	CAS NO.	PERCENT BY WEIGHT	OCCUPATIONAL EXPOSURE LIMITS TLV ACGIH	OCCUPATIONAL EXPOSURE LIMITS PEL OSHA	VAPOR PRESSURE (mm. Hg)
VM&P Naphtha	64742-89-8	17	300 ppm	500 ppm	45@25°C.
n-Butanol	71-36-3	7	50	100	5.5@20°C.
Toluene	108-88-3	1	100	200	54@25°C.
Isopropanol	67-63-0	8	400	400	32.8@20°C.
2-Butoxyethanol	111-76-2	3	25	50	0.6@20°C.
Isobutyl Acetate	110-19-0	13	150	150	13@20°C.
Propylene Gylcol Monomethyl Ether Acetate	108-65-6	2	NA	NA	3.7@20°C.
Methyl Ethly Ketone	78-93-3	1	200	200	78@20°C.

Section III—PHYSICAL DATA

BOILING RANGE: 175-340°F.
VAPOR DENSITY: Heavier than air
Appearance & odor: White liquid; characteristic non-resicual odor.
EVAPORATION RATE: Slower than Ether
% VOLATILE VOLUME: 68
WT/GAL: 7.8 - 9.9

Section IV—FIRE AND EXPLOSION HAZARD DATA

FLAMMABILITY CLASSIFICATION: OSHA IB
DOT Flammable Liquid
FLASH POINT: 78°F. (TCC)
LEL: 1.0

EXTINGUISHING MEDIA: Use National Fire Protection Association Class B Extinguishers (CO_2, dry chemical or foam) for NFPA Class B fires.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Keep containers tightly closed. Isolate from heat, electrical equipment, sparks and open flames. Closed containers may explode when exposed to extreme heat. Do not apply to surfaces that are above 140° F.

SPECIAL FIREFIGHTING PROCEDURES: Water spray may be ineffective. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat. It water is used, fog nozzles are preferable. Full protective equipment including self-contained breathing apparatus is needed to protect fire

Section V—HEALTH HAZARD DATA

EFFECTS OF OVEREXPOSURE: Acute inhalation—anaesthetic: irritation of the respiratory tract or acute nervous system, depression, headache, dizziness, staggering gait or coma. Skin or eye contact—irritation. Chronic inhalation—lethargy, narcosis; lung, liver and kidney damage. Ingestion may result in vomiting. May be harmful or fatal is swallowed.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE: Preexisting eye, skin, respiratory and medical disorders may be aggravated.

PRIMARY ROUTE(S) OF ENTRY: ☒ DERMAL ☒ INHALATION ☐ INGESTION

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation:	Remove to fresh air. Restore breathing.
Splash (eyes):	Flush immediately with large amounts of water for at least 15 minutes. Take to a physician for medical treatment.
Splash (skin):	Wash affected areas with soap and water. Remove contaminated clothing.
Ingestion:	Drink 1 or 2 glasses of water to dilute. Do not induce vomiting. Consult physician or poison control center immediately. (1-800-392-8549)

Section VI—REACTIVITY DATA

STABILITY: ☐ UNSTABLE ☒ STABLE

HAZARDOUS POLYMERIZATION ☐ MAY OCCUR ☒ WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: CO_2 and Nitrogen Oxides; Carbon Monoxide.

CONDITIONS TO AVOID: Heat, sparks and flame.

INCOMPATABILITY (MATERIALS TO AVOID): Oxidizing agents such as nitric acid.

Section VII—SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Absorb and place in scalable containers.

WASTE DISPOSAL: Disposal must be accomplished in compliance with local, state and federal regulations.

Section VIII—SAFE HANDLING AND USE INFORMATION

RESPIRATORY PROTECTION: In outdoor or open areas used approved mechanical-filter respirator to remove solid air borne particles of overspray during spray application. In restricted ventilation areas use approved chemical-mechanical filters designed to remove a combination of particulate and gas and vapor. In confined areas, use approved air line type of respirators or hoods.

VENTILATION: Provide general dilution or local exhaust ventilation in volume and pattern to keep TLV of most hazardous ingredient in SECTION II below acceptable limit, LEL in SECTION IV below state limit, and to remove decomposition products during welding or flame cutting surfaces coated with this product.

PROTECTIVE GLOVES: Neoprene or rubber gloves required for prolonged or repeated contact.

EYE PROTECTION: Safety eyewear including splash guards.

OTHER PROTECTIVE EQUIPMENT: Outerwear to protect against clothing contamination and skin contact.

HYGIENIC PRACTICES: Wash hands before eating, drinking or using tobacco products.

Section IX—SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Do not store above 120° F. Store large quantities in buildings designed and protected for storage of OSHA Classification Flammable Liquid indicated in SECTION IV.

OTHER PRECAUTIONS: Do not take internally. Containers should be grounded when pouring. Avoid storing near open flames. Do not flame cut, braze or weld without approved respirator or appropriate ventilation.

This MSDS should be attached or kept with the rsapectlve product with which It 1s assoclatad.

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M" "RIAL SAPSTT DATA SHEET - A0826

Assoclatad Orsingar Items

6A3ee

M A T B R I A L 3 A P E T T D A T A S H E E T

SECTION 1 - CHEMICAL PRODUCT AND COMPAHY IDEHTir1CATIOH

PRODUCT NAMS : PLAT BLACK 9604847

IDEHTIPICATION HUMBER: 0412 402

DATE PRIHTED : 11/03/97

PRODUCT USE/CLASS : ALKTO ENAMEL

SUPPLIER: KAHUFACTURER:

RUST-OLEDH CORPORATION RUST-OLEUM CORPORATION

11 HAWTHORN PARKWAT 11 HAHTHORN PARKNAT

VERNOH HILLS, ILLINOIS VERNOH HILLS, ILLINOIS

80086 USA 80061 USA

(847) 367-7700 RUST-OLEUM CORP. (847) 367-7700 RUST-OLEUM CORP.

HON.-FRI, 8:00 AH-4:30 PH HON.-FRI, 8:00 AH-4:30 PH

PREPARBS: PC, PHOHE: , PREPARE DATE: 06/11/97

SECTION 2 - COHPOSITION/IBPORHATION OH INOREDIEHTS

ITEH	CHEMICAL NAME	CAS NUMBER	Wt/Wt % LESS THAN
01	CALCIUH CARBONATE	1317-65-3	50.0 %
02	STODDARO SOLVENT	8052-41-3	25.0 %
03	CASeON BLACK	1333-86-4	5.0 %
04	1,2,4-TRIMETHTLBBNZEUB	95-63-6	5.0 %
5	1,3,5-TRIHBTHTLBENZENE	108-67-8	5.0 %
06	COBALT DRIER	136-52-7	0.1 %

EXPOSURE LIMITS

ITEH	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COHPANT TLV-TWA	SKIN
01	10HG/H3	N.E.	15HG/H3	H.S.	N.E.	NO
02	100PPH	H.E.	100PPH	N.E.	N.E.	NO
03	3.5 H0/H3	N.E.	3.5 HG/H3	N.E.	N.E.	HO
04	25 PPH	N.E.	N.E.	N.E.	N.E.	NO
05	25 PPH	N.E.	N.E.	N.E.	N.E.	NO
08	N.E.	N.E.	N.E.	N.E.	N.E.	HO

(SEE SECTION 16 FOR ABBREVIATION LBGEND)

SECTION 3 - HAZARDS IDENTIFICATION

*** EHERSENCT OVERVIEW ***: HARHFUL IP SWALLOWED. CAUSES (TARGET OROAN OR SYSTEH) OAHAGE. CAUSES ETE IRRITATION. VAPORS IRRITATING TO ETES AND RSSPIRATOSY TRACT. COHBUSTIBLE LIQUID AND VAPOR.

EFFECTS OP OVEREXPOSURE - ETE CONTACT: CAUSES ETE IRRITATION.

EFFECTS OP OVERSZPOSURS - SKIN CONTACT: HAT CAUSE SKIN IRRITATION.

EFFECTS OP OVEREXPOSURE - INHALATION: HARHFUL IP INHALED. HAT CAUSE HEADACHES AND DIZZINESS.

EFFECTS OP OVEREXPOSURE - INOESTION: SUBSTANCE HAT BE HARHFUL IP SWALLOWED. ASPIRATION HAZARD IP SWALLOWED; CAN ENTER LUNOS AND CAUSE DAHAGE.

EFFECTS OP OVEREXPOSURE - CHRONIC HAZARDS: REPORTS HAVE ASSOCIATED REPEATED AND PROLONOED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERHANENT "RAIN AHO NERVOUS SYSTEH DAHAGE. CONTAINS CARBON BLACK. CHRONIC /LAHHATION, LUNG FIBROSIS, AND LUNG TUHORS RAVE BEEN OBSERVED IN SOHE RATS EZPER'HENTALLT EXPOSED FOR LONG PERIODS OP TIHE TO EICESSIVE CONCENTRATIONS OP CARBON BLACK AND SEVERAL INSOLUBLE FINE DUST PARTICLES. TUHORS HAVE NOT BEEN OBSERVED IH OTHER AHIHAL SPECIES (I.E., HOUSE AND HAHPSTER) UNDER SIHILAR CIRCUHSTANCES

LO50/LC50: VALUES ARE HOT APPROPRIATE OR AVAILABLE.

SECTION 12 - ECOLOGICAL INFORMATION

CHEMICAL FATE: VITRIFIED PRODUCTS DO NOT APPRECIABLY DECAY.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: USE STANDARD LANDFILL METHODS CONSISTENT WITH APPLICABLE FEDERAL, STATE, PROVINCIAL AND LOCAL LAWS.

SECTION 14 - TRANSPORT INFORMATION

HAZARD CLASS:

SECTION 15 - REGULATORY IHFORMATION

EXPOSURE LIMITS/REGULATORY INFORMATION

SUBSTANCE DESCRIPTION	UNITS	OSHA	ACGIH	MOL	MAK
ALUMINUM OXIDE	MG/M3	15.0000	10.0000	10.0000	6.0000
PETROLATUM	PPM	0.0000	0.0000	0.0000	0.0000
AMORPHOUS SILICA, FUSED	MG/M3	0.1000	0.1000	0.0000	0.3000

EXPOSURE LIMIT DESCRIPTIONS:

ACGIH AM. CONF. GOVMNT. IND. HTG. MAK FRG MAX. CONC. VALUES

HOL MINISTRY OF LABOR, CAN. OSHA OCC. SAFETY & HEALTH ADMIH.

CA PROP 65: NOT APPLICABLE

TSCA: SECTION 8(B) - INVENTORY STATUS ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE RBOULATIOHS OF THE TOXIC SUBSTANCE CONTROL ACT.

DOMESTIC SUBSTANCE LIST:

SECTION 16 - OTHER INFORMATION

DISCLAIMER: THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE HEREOF; HOWEVER, NORTON COMPANY MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THE INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USER THEREOF.

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

AL SAFETY DATA SHEET - A46S8

Associated Grainger Items

5H902

MATERIAL SAFETI DATA SHEET

------SECTION 1 - CHSHICAL PRODUCT AND COUPANT IDENTIPICATIOR ------

PRODUCT HAME: TAM 9806057

IDENTIFICATION HUMBER: V2171 838

DATE PRINTED: 04/19/01

PRODUCT USE/CLASS: HARD HAT/AEROSOL

SUPPLIER:
RUST-OLEUM CORPORATION
11 HAWTHORH PARKHAT
VERNON BILLS, ILLINOIS 60061
USA

(8%7) 367-7700 RUST-OLEUM CORP.
M-4:30 PH/24-HR EMER.ASSIST

KAHUFACTURER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERHDN HILLS, ILLINOIS 60061
USA.

(847) 367-7700 RUST-OLEUM CORP.
8:00 AH-4:30 PH/24-HR SHER.ASSIST

PREPARER: KTH
PHONE: 847-816-2445
PREPARE DATE: 04/19/01

------SECTION 2 - COMPOSITION/INFORMATION ON INSREDIENTS ------

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	LIQUIFIED PETROLEUM OAS	68476-65-7	30.0%
02	ACETONE	67-64-1	25.0%
03	XYLENE	1330-20-7	20.0%
04	ETHTLBENZENE	100-41-4	10.0%
05	TITANIUM DIOXIDE	13463-67-7	10.0%
06	ETHYLENE OLYCOL MONOBUTYL ETHER	111-76-2	5.0%

EXPOSURE LIMITS

	ACOIH		OSHA		MEXICAN	
ITEM	TLV-THA	TLV-STEL	PEL-THA	PEL-CEILIHO	TLV-THA	SKIN
01	1000 PFH	N.E.	1000 PPM	N.E.	N.E.	NO
02	750 PPM	1000 PPM	750 PPM	N.E.	N.E.	NO
03	100 PPM	150 PPM	100 PPM	N.E.	100 PPM	YES
04	100 PPM	125 PPM	100 PPM	N.E.	N.E.	TES
05	10 MG/M3	N.E.	15 MG/M3	N.E.	N.E.	NO
06	25 PPM	N.E.	50 PPM	N.E.	N.E.	YES

(SEE SECTION I8 FOR ABBREVIATION LEGEND)

------SECTION 3 - HAZARDS IDENTIFICATION ------

EHERGENCY OVERVIEW:
HARMFUL IP INHALED. HARMFUL IF SHALLOWED. EZTHEHELY FLAMMABLE LIQUID AND VAPOR. VAPORS MAY CAUSE FLASH FIRE OR EXPLOSION. HARMFUL IP INHALED. HAY EFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. CONTENTS UNDER PRESSURE.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES ETE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT:
SUBSTANCE MAY CAUSE SLIGBT SKIN IRAITATION. PROLONGED OR REPEATED CONTACT MAY CAUSE SKIN IRRITATIOB. MAY BE HARMFUL IF ABSORBED THROUOH SKIN.

EFFECTS OF OVEREXPOSURE - INHALATION:
HARMFUL IF INHALED. HIGH OAS, VAPOR, HIST OR DUST CONCENTRATIONS MAY BE HARMFUL IF INHALED. AVOID BREATHING VAPORS OR MISTS. HIGH VAPOR CONCENTRATIONS ARE IRRITATING TO THE BYES, HOSE, THROAT AND LUNGS.

EFFECTS OF OVEREXPOSURE - INOESTION:
SUBSTANCE MAT BE HARMFUL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNOS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:
MAY CAUSE CENTRAL NERVOUS SYSTEM DISORDER (E.G., NARCOSIS INVOLVING A LOSS OF COORDINATION, WEAKNESS, FATIGUE, MENTAL CONFUSION, AND BLURRED VISION) CAN. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT.

SPECIAL FIREFIOHTINO PROCEDURES:
EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

AND/OR DAMAGE. REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AMD NERVOUS SYSTEM DAMAGE. OVEREXPOSURE TO XYLENE IN LABORATORY ANIMALS HAS BEEN ASSOCIATED WITH LIVER ABNORMALITIES, KIDNEY, LUNG, SPLEEN, BYE AND BLOOD DAMAGE AS HELL AS

REPRODUCTIVE DISORDERS. EFFECTS IN HUMANS, DUE TO CHRONIC OVEREXPOSURE, HAVE INCLUDED LIVER, CARDIAC ABNORMALITIES AND NERVOUS SYSTEM DAMAGE.

Y ROUTE(S) OF ENTRY:

BSORPTION

INHALATION

EYE CONTACT

------SECTION 4 - FIRST AID MEASURES ------

FIRST AID - EYE CONTACT:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.

FIRST AID - SKIN CONTACT:
WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - INHALATION:
IF YOU EXPERIENCE DIFFICULTY IN BREATHING, LEAVE THE AREA TO OBTAIN FRESH AIR. IF CONTINUED DIFFICULTY IS EXPERIENCED, GET MEDICAL ASSISTANCE IMMEDIATELY.

FIRST AID - INGESTION:
ASPIRATION HAZARD:
DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. GET IMMEDIATE MEDICAL ATTENTION.

------SECTION 5 - FIRE FIGHTING MEASURES ------

FLASH POINT: -99 F

LOWER EXPLOSIVE LIMIT: 1.0%
UPPER EXPLOSIVE LIMIT: 12.8%

AUTOIGNITION TEMPERATURE: ND

EXTINGUISHING MEDIA:
DRY CHEMICAL
FOAM

UNUSUAL FIRE AND EXPLOSION HAZARDS:
FLASH POINT IS LESS THAN 30 DEG. F. - EXTREMELY FLAMMABLE LIQUID AND VAPOR! WATER SPRAY MAY BE INEFFECTIVE. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT DUE TO BUILDUP OF STEAM. CLOSED CONTAINERS MAY EXPLODE WHEN EXPOSED TO EXTREME HEAT. VAPORS MAY FORM EXPLOSIVE MIXTURES WITH AIR. VAPORS CAN TRAVEL TO A SOURCE OF IGNITION AND FLASH BACK. KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. PERFORATION OF THE PRESSURIZED CONTAINER MAY CAUSE BURSTING OF THE SKIN PROTECTION.

PROTECTION:
SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT:
REFER TO SAFETY SUPERVISOR OR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

------SECTION 6 - ACCIDENTAL RELEASE MEASURES ------

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
EVACUATE THE AREA, REMOVE ALL SOURCES OF IGNITION AND VENTILATE WELL. CONTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. REMOVE ALL SOURCES OF IGNITION, VENTILATE AREA AND REMOVE WITH INERT ABSORBENT AND NON-SPARKING TOOLS. DISPOSE OF ACCORDING TO LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

------SECTION 7 - HANDLING AND STORAGE ------

HANDLING:
WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. USE ONLY IN A WELL-VENTILATED AREA. FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES. AVOID BREATHING VAPOR OR MIST.

STORAGE:
KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. DO NOT STORE ABOVE 120 DEGREES F. STORE LARGE QUANTITIES IN BUILDINGS DESIGNED AND PROTECTED FOR STORAGE OF NFPA CLASS I FLAMMABLE LIQUIDS. CONTENTS UNDER PRESSURE. DO NOT EXPOSE TO HEAT OR STORE ABOVE 120 DEGREES F.

------SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION ------

ENGINEERING CONTROLS:
USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. USE EXPLOSION-PROOF VENTILATION EQUIPMENT. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION:
A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION:
USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL THROUGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE

HAZARDOUS DECOMPOSITION PRODUCTS:
BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE. WHEN HEATED TO DECOMPOSITION IT EMITS ACRID SMOKE AND IRRITATING FUMES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

HYGIENIC PRACTICES:

WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

------SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ------

BOILING RANGE: -34 - 336 F

ODOR: SOLVENT

APPEARANCE: LIQUID

SOLUBILITY IN H2O: SLIGHT

FREEZE POINT: ND

VAPOR PRESSURE: ND

PHYSICAL STATE: LIQUID

COEFFICIENT OF WATER/OIL DISTRIBUTION: ND

VAPOR DENSITY: IS HEAVIER THAN AIR

ODOR THRESHOLD: ND

EVAPORATION RATE: IS FASTER THAN ETHER

'IC GRAVITY: 1.2092

pH @ 0.0%: ND

VISCOSITY: ND

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

------SECTION 10 - STABILITY AND REACTIVITY ------

CONDITIONS TO AVOID:

AVOID TEMPERATURES ABOVE 120 DEGREES F. AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY:

INCOMPATIBLE WITH STRONG OXIDIZING AGENTS, STRONG ACIDS AND STRONG ALKALIES.

RESP. GUIDE PAGE: 126

------SECTION 15 - REGULATORY INFORMATION ------

FEDERAL REGULATIONS: AS FOLLOWS -

OSHA:

HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

------SECTION 11 - TOXICOLOGICAL PROPERTIES ------

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
LIQUIFIED PETROLEUM GAS	N.E.	N.E.
ACETONE	RAT 5800 MG/KG	RAT 50100 MG/M3 8H
XYLENE	RAT 4300 MG/KG	RAT 5000 PPM 4HR
ETHYLBENZENE	RAT 3500 MG/KG	N.A.
TITANIUM DIOXIDE	24000 MG/KG RATS	6820 MG/M3 RATS
ETHYLENE GLYCOL MONOBUTYL ETHER	MOUSE 1519 MG/KG	MOUSE 700 PPM 7HR

------SECTION 12 - ECOLOGICAL INFORMATION ------

ECOLOGICAL INFORMATION:

PRODUCT IS A MIXTURE OF LISTED COMPONENTS. ACCORDING TO OUR RAW MATERIAL SUPPLIERS, ALL COMPONENTS ARE LISTED ON THE TSCA INVENTORY AS REQUIRED OR MEET THE POLYMER EXEMPTION AS DEFINED IN SECTION 5.5.2 OF THE TOXIC SUBSTANCES CONTROL ACT.

------SECTION 13 - DISPOSAL CONSIDERATIONS ------

DISPOSAL METHOD:

DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AND ORDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

------SECTION 14 - TRANSPORTATION INFORMATION ------

DOT PROPER SHIPPING NAME: AEROSOL

DOT TECHNICAL NAME:

DOT HAZARD CLASS: 2

HAZARD SUBCLASS: 1

DOT UN/NA NUMBER: UN1950

PACKING GROUP:
ALKYD RESIN SOLUTION 68552-41-0

CALIFORNIA PROPOSITION 65:

WARNING:

THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

CHEMICAL NAME CAS NUMBER

ACCORDING TO OUR RAW MATERIAL SUPPLIERS NO PROPOSITION 65 CHEMICALS EXIST IN THIS PRODUCT ABOVE OSHA DE MINIMUS LEVELS. ALL PRODUCTS COMPLY WITH

THIS PRODUCT HAS BEEN REVIEWED ACCOROIHG TO THE EPA 'HAZARD CATEGORIES' PROMULGATED UNDER SECTIONS 311 AHD 312 OF THE SUPERFUND AMENDMENT AHD REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AHD IS COHSIDERED, UNDER 'ABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:

IMMEDIATE HEALTH HAZARD

CHRONIC HEALTH HAZARD

PIRE HAZARD

SARA SECTION 313:

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL HAME	CAS NUMBER	WT/WT % IS LESS THAN
XYLENE	1330-20-7	20.0%
ETHYLBENZENE	100-41-4	10.0%
ETHYLENE GLYCOL MONOBUTYL ETHER	111-76-2	5.0%

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:

THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG TBE TOP FIVE COMPOHEHTS IN THIS PRODUCT:

CHEMICAL NAME	CAS HUMBER
ALKYD RESIN SOLUTION	68552-41-0

PENNSYLVANIA RIGHT-TO-KNOH:

THE FOLLOWING HOH-HAZARDOUS IHGREDIENTS ARB PRESBHT IH THE PRODUCT AT GREATER THAN 3%:

CHEMICAL HAME	CAS NUMBER

LABEL PROVISIONS OF PROPOSITION 65.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS:

THIS MSDS HAS BEEH PREPARED IH COHPLIANCB WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USB OP THE 16 HEADINGS.

CANADIAN WHMIS CLASS:

A

B5

D2A

D2B

------SECTION 16 - OTHER INFORMATION ------

HMIS RATINGS -

HEALTH:

FLAMMABILITY:

REACTIVITY:

PREVIOUS MSDS REVISION DATE: 06/28/00

REASON FOR REVISION: TRANSPORTATION INFORMATION

LEGEND:

N.A. - NOT APPLICABLE

N.B. - HOT ESTABLISHED

N.D. - NOT DETERMINED

: NO IHFORMATIOH.

THE INFORMATION COHTAIHBD ON THIS MSDS HAS BEEN CHECHED AND SHOULD BE ACCURATE. BOHBVBR, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL FEDERAL, STATE, AHD LOCAL LAHS AND REGULATIONS.

PICK REQ: 0152566534 ITEM: 6H500 MSDS: A1020

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

AL SAFETY DATA SHEET - A1020

Associated Grainger Items

6R500

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : HD RUST INHIBITIVE PR 9705605

IDENTIFICATION NUMBER: 1069 402

DATE PRINTED : 12/08/97

PRODUCT USE/CLASS : ENAMEL/ALKYD

SUPPLIER:	MANUFACTURER:
RUST-OLEUM CORPORATION	RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY	11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS	VERNON HILLS, ILLINOIS
60061 USA	60061 USA
(847) 367-7700 RUST-OLEUM CORP.	(847) 367-7700 RUST-OLEUM CORP.
MON.-FRI, 6:00 AM-4:30 PM	MON.-FRI, 6:00 AM-4:30 PM

PREPARER: LOW, PHONE: , PREPARE DATE: 06/11/97

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THA
01	STODDARD SOLVENT	8052-41-3	15.0
02	CALCIUM CARBONATE	1317-65-3	10.0
03	1,3,5-TRIMETHYLBENZENE	108-67-8	5.0
04	1,2,4-TRIMETHYLBENZENE	95-63-6	5.0
5	COBALT DRIER	136-52-7	0.1

EXPOSURE LIMITS

ITEM	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COMPANY TLV-TWA	SKI
01	100PPM	N.E.	100PPM	N.E.	N.E.	NO
02	10MG/M3	N.E.	15MG/M3	N.E.	N.E.	NO
03	25 PPM	N.E.	N.E.	N.E.	N.E.	NO
04	25 PPM	N.E.	N.E.	N.E.	N.E.	NO
05	N.E.	N.E.	N.E.	N.E.	N.E.	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 3 - HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***: HARMFUL IF SWALLOWED. CAUSES (TARGET ORGAN O SYSTEM) DAMAGE. CAUSES EYE IRRITATION. VAPORS IRRITATING TO EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION: HARMFUL IF INHALED. MAY CAUSE HEADACHES AND DIZZINESS.

EFFECTS OF OVEREXPOSURE - INGESTION: SUBSTANCE MAY BE HARMFUL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANEN BRAIN AND NERVOUS SYSTEM DAMAGE.

PRIMARY ROUTE(S) OF ENTRY: INHALATION EYE CONTACT

EYE PROTECTION: USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

LIQUIDS.

OTHER PROTECTIVE EQUIPMENT: REFER TO SAFETY SUPERVISOR OR INDUSTRIAL

SECTION 4 - FIRST AID MEASURES

FIRST AID - EYE CONTACT: HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATE FOR AT LEASE 15 MINUTES. GET MEDICAL ATTENTION.

FIRST AID - SKIN CONTACT: WASH WITH SOAP AND WATER. GET MEDICAL ATTENTIO IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION: ASPIRATION HAZARD: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. GET IMMEDIATE MEDICAL ATTENTION.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: 105 F LOWER EXPLOSIVE LIMIT: 0.9 %

UPPER EXPLOSIVE LIMIT: 6.4 %

AUTOIGNITION TEMPERATURE: NE

EXTINGUISHING MEDIA: DRY CHEMICAL FOAM WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.

SECTION 5 - FIRE FIGHTING MEASURES

SPECIAL FIREFIGHTING PROCEDURES: WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILDUP AND POSSIBLE AUTOIGNITION OR EXPLOSION. EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CONTAIN SPILLE LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. DISPOSE OF ACCORDING TO LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

SECTION 7 - HANDLING AND STORAGE

HANDLING: WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES. AVOID BREATHING VAPOR OR MIST. AVOID CONTACT WITH EYES.

STORAGE: KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. KEEP AWAY FROM HEAT, SPARKS, FLAME AND SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION: A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. A NIOSH/MSHA APPROVED AIR PURIFYIN RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION: USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL THROUGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION.

SARA SECTION 313:

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

HYGIENIC PRACTICES: WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, ORINKING OR SMOKING.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: 310 - 383 P	VAPOR DENSITY	: IS HEAVIER THAN AIR
ODOR	: SOLVENT	ODOR THRESHOLD	: NE
APPEARANCE	: LIQUID	EVAPORATION RATE:	IS SLOWER THAN ETHE
SOLUBILITY IN H20	: SLIGHT		
FREEZE POINT	: ND	SPECIFIC GRAVITY:	1.3816
VAPOR PRESSURE	: ND	PH @ 0.0 %	: ND
PHYSICAL STATE	: LIQUID	VISCOSITY	: >100 SUS

COEFFICIENT OF WATER/OIL DISTRIBUTION: NE

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY: INCOMPATIBLE WITH STRONG OXIDIZING AGENTS, STRONG ACIDS AND STRONG ALKALIES.

HAZARDOUS DECOMPOSITION PRODUCTS: BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

SECTION 11 - TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
STODDARD SOLVENT	4900MG/KG(RAT)	N.E.
CALCIUM CARBONATE	NONE	NONE
1,3,5-TRIMETHYLBENZENE	RAT 1303MG/KG	RAT 24MG/M^3 4HR
1,2,4-TRIMETHYLBENZENE	N.E.	RAT 18G/M^3 4HR
COBALT DRIER	NA	NA

SECTION 11 - TOXICOLOGICAL PROPERTIES

SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: PRODUCT IS A MIXTURE OF LISTED COMPONENTS.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AND ORDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

SECTION 14 - TRANSPORTATION INFORMATION

NO TRANSPORTATION INFORMATION IS AVAILABLE.

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA 'HAZARD CATEGORIES' PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:

IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD FIRE HAZARD

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
1,2,4-TRIMETHYLBENZENE	95-63-6	5.0 %
XYLENE	1330-20-7	1.0 %
ETHYLBENZENE	100-41-4	0.1 %

TOXIC SUBSTANCES CONTROL ACT:

SECTION 15 - REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:

CHEMICAL NAME	CAS NUMBER

NO INFORMATION IS AVAILABLE.

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:

THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE COMPONENTS IN THIS PRODUCT:

CHEMICAL NAME	CAS NUMBER
MAGNESIUM SILICATE HYDRATE	14807-96-6
ALKYD RESIN	66070-60-8
ALKYD RESIN-TRADE SECRET	MIXTURE

PENNSYLVANIA RIGHT-TO-KNOW:

THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

CHEMICAL NAME	CAS NUMBER
MAGNESIUM SILICATE HYDRATE	14807-96-6
ALKYD RESIN	66070-60-8
ALKYD RESIN-TRADE SECRET	MIXTURE
BROWN IRON OXIDE	1309-37-1
CHEMICAL COMPOSITE	66402-68-4
HYDRTREATED LIGHT DISTILLATE	64742-47-8

CALIFORNIA PROPOSITION 65:

WARNING: THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

CHEMICAL NAME	CAS NUMBER

NO PROPOSITION 65 CHEMICALS EXIST IN THIS PRODUCT.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: NO INFORMATION AVAILABLE.

SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: FLAMMABILITY: REACTIVITY:

PREVIOUS MSDS REVISION DATE: 04/10/97

SECTION 16 - OTHER INFORMATION

LEGEND: N.A. - NOT APPLICABLE, N.E. - NOT ESTABLISHED,
N.D. - NOT DETERMINED
: NO INFORMATION.

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL

PICK_REQ: 0151491595 ITEM: 5H887 MSDS: A4700

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

IAL SAFETY DATA SHEET - A4700

Associated Grainger items

5H887

HATBRIAL SAFETY DATA SHEET

------SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ------

PRODUCT NAME: THINNER 0001645

IDENTIFICATION HUMBER: 0633 402

DATE PRINTED: 05/10/00

PRODUCT USE/CLASS: THINNER/SOLVENT

SUPPLIER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS 60061
USA

(847) 367-7700 RUST-OLEUM CORP.
AM-4:30 PM/24-HR EMER.ASSIST

MANUFACTURER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS 60061
USA

(847) 367-7700 RUST-OLEUM CORP.
8:00 AM-4.30 PM/24-HR EMER. ASSIST

PREPARER: L.J.H.
PHONE: 847-816-2445
PREPARE DATE: 04/27/00

------SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS ------

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	STODDARD SOLVENT	8053-41-3	100.0%

EXPOSURE LIMITS

	ACGIH		OSHA		MEXICAN	
ITEM	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	100 PPM	N.E.	100 PPM	N.E.	100 PPM	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

------SECTION 3 - HAZARDS IDENTIFICATION ------

EMERGENCY OVERVIEW:
HARMFUL IF SHALLOWED. CAUSES BYE IRRITATION. VAPORS IRRITATING TO BYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF INHALED. MAY EFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR HAUSEA.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSE EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION:
HARMFUL IF INHALED. HAY CAUSE HEADACHES AND DIZZINESS. HIGH VAPOR CONCENTRATIONS ARE IERITATIKG TO THE EYES, NOSE, THROAT AND LUNGS.

EFFECTS OF OVEREXPOSURE - INGESTION:
SUBSTANCE MAY BE HARMFUL IF SHALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:
REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVSRBIPOSUSS TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE.

PRIMARY ROUTE(S) OF ENTRY:
SKIN ABSORPTION
INHALATION
BIB COHTACT

------SECTION 4 - FIRST AID MEASURES ------

FIRST AID - EYE CONTACT:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTEHTION.

FIRST AID - SKIN COHTACT:
WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - IHHALATION:
REMOVE TO FRESH AIR. IF HOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXIGEH. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION:
ASPIRATION HAZARD:
DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAH EHTER THB LUNGS AHD CAUSE SEVERE LUHG DAHAGE. GET IMMEDIATE MEDICAL ATTEHTION.

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVBR WORKPLACE CONDITIOHS WARRANT A RESPIRATOR'S USB. A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BB PERMISSIBLE UNDER CERTAIN

------SECTION 5 - FIRE FIGHTING HBASURES ------

FLASH POINT: 112 F (SETAFLASH CLOSED CUP)

EXPLOSIVE LIMIT: 1.0%
EXPLOSIVE LIMIT: 6.0%

AUTOIGNITION TEMPERATURE: NE

EXTINGUISHING MEDIA:
DRY CHEMICAL
FOAM
WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.

SPECIAL FIREFIGHTING PROCEDURES:
WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILDUP AND POSSIBLE AUTOIGNITION OR EXPLOSION. EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

------SECTION 6 - ACCIDENTAL RELEASE MEASURES ------

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
CONTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. DISPOSE OF ACCORDING TO LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

------SECTION 7 - HANDLING AND STORAGE ------

HANDLING:
WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES. AVOID BREATHING VAPOR OR MIST. AVOID CONTACT WITH EYES.

STORAGE:
KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. KEEP AWAY FROM HEAT, SPARKS, FLAME AND SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE.

------SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION ------

ENGINEERING CONTROLS:
USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION:

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

------SECTION 10 - STABILITY AND REACTIVITY ------

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION:
USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL THROUGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION.

EYE PROTECTION:
USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT:
REFER TO SAFETY SUPERVISOR OR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

HYGIENIC PRACTICES:
WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

------SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ------

BOILING RANGE: 318-383 F

ODOR: SOLVENT

APPEARANCE: LIQUID

SOLUBILITY IN H2O: SLIGHT

FREEZE POINT: ND

VAPOR PRESSURE: NE

PHYSICAL STATE: LIQUID

COEFFICIENT OF WATER/OIL DISTRIBUTION: NE

VAPOR DENSITY: IS HEAVIER THAN AIR

ODOR THRESHOLD: NE

EVAPORATION RATE: IS SLOWER THAN ETHER

SPECIFIC GRAVITY: 0.7777

pH @ 0.0%: ND

VISCOSITY: <100 SUS

PACKING GROUP: II

RESP. GUIDE PAGE: 127

------SECTION 15 - REGULATORY INFORMATION ------

INCOMPATIBILITY:

INCOMPATIBLE WITH STRONG OXIDIZING AGENTS, STRONG ACIDS AND STRONG ALKALIES.

'DOUS DECOMPOSITION PRODUCTS:

ZK FLAME, CARBON MONOXIDE AHD CARBON DIOXIDE. WHEN HEATED TO DECOMPOSITION IT EMITS ACRID SMOKE AND IRRITATING FUMES.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR UNDER NORMAL COHDITIOHS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

------SECTIOH 11 - TOXICOLOGICAL PROPERTIES ------

COHPOHHHT TOXICOLOGICAL IHFORHATION:

CHEMICAL HAME	LD50	LC50
STODDARD SOLVENT	4900 MG/XO (RAT)	H.B.

------SECTION 12 - ECOLOGICAL IHFORMATIOH ------

ECOLOGICAL IHFORMATIOH:

PRODUCT IS A MIXTURE OF LISTED COMPONENTS. ACCORDING TO OUR RAW MATERIAL SUPPLIERS, ALL COMPOHENTS ARE LISTED ON THE TSCA INVENTORY AS REQUIRED OR HEET THE POLYHER EIEMPTION AS DEFINED IH SECTIOH 5.5.2 OF THE TOXIC SUBSTAHCES CONTROL ACT.

------SECTION 13 - DISPOSAL CONSIDERATIONS ------

DISPOSAL METHOD:

DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AHD ORDIHAHCES. DO HOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

------SECTION 14 - TRAHSPORTATIOH INFORMATION ------

DOT PROPER SHIPPING NAME: PAINT RELATED MATERIAL

DOT TECHNICAL NAME:

DOT HAZARD CLASS: 3

HAZARD SUBCLASS:

DOT UH/HA HUMBER: UH1263

CALIFORHIA PROPOSITION 65:

WARNING:

THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWH TO TBE STATE OF CALIFORHIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

~~MICAL HAMB	CAS NUMBER

ACCORDING TO OUR RAH MATERIAL SUPPLIERS HO PROPOSITION 65 CHEMICALS EXIST IN THIS PRODUCT ABOVE OSHA DE MINIMUS LEVELS. ALL PRODUCTS COMPLY WITH LABEL PROVISIONS OF PROPOSITION 65.

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA:

HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA 'HAZARD CATEGORIES' PROMULOATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUHD AHEHDHEHT AHD REAUTHORIZATIOH ACT OF 1986 (SARA TITLE III) AHD IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWIHG CATEGORIES:

IMMEDIATE HEALTH HAZARD
CHROMIC HEALTH HAZARD
FIRE HAZARD

SARA SECTION 313:

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREHEHTS OF SECTIOH 313 OF TITLE III OF THE SUPERFUHD AMEHDHEHTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 373:

CHEMICAL HAME	CAS NUMBER	HT/HT % IS LESS THAN

NO SARA SECTION 313 COMPONENTS EXIST IN THIS PRODUCT ABOVE DE MIHIMUS LEVELS.

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:

THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE COMPONENTS IN THIS PRODUCT:

CHEMICAL HAME	CAS HUMBER
TSRPINBOL (PINE OIL)	8002-09-3
SILOXAHE/ORGANIC ACID ESTER	NOT AVAILABLE
DUROPLAST ADDITIVE BYK-A 500	NOT AVAILABLE

PENNSYLVANIA RIGHT-TO-KNOW:

THE FOLLOWIHG NON-HAZARDOUS INQREDIEHTS ARE PRESBHT IH THE PRODUCT AT GREATER THAH 3%:

CHEMICAL HAMB	CAS NUMBER
NO NON-HAZARDOUS INGREDIENTS ARE PRESENT AT GREATER THAN 3%.	

------SECTION 16 - OTHER INFORMATION ------

HMIS RATINGS -

HEALTH: 2*

FLAMMABILITY: 2

REACTIVITY: 0

PREVIOUS MSDS REVISION DATE: 04/12/00

REASON FOR REVISION: WHMIS CLASS ADDITION

LEGEND:

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS:

MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT
..TIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN HMIS CLASS:

B3

D2B

N.A. - NOT APPLICABLE

N.E. - NOT ESTABLISHED

N.D. - NOT DETERMINED

: NO INFORMATION.

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

PICK_REQ: 0151491595 ITEM: 5H887 HAZMAT: 5H887

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

```
 ********************************************************************************
GRAINGER SHIPPING INFORMATION
STOCK #                  : 5H887
MSDS  #                  : A4700
FREIGHT CODE             : 0204
DOT PROPER SHIP NAME     : COMBUSTIBLE LIQUID, (PAINT),
                           NOT REGULATED BY THE DOT AS A HAZARDOUS MATERIAL
                           PER 49 CFR 173.150(F)(2)


UPS RESTRICTIONS         :

HAZARDOUS CLASS NUMBER   :
UN ID #                  :
PACKING GROUP            :
SHIPPING LABEL           :
                         :
LIMITED QUANTITY         : N
CARTON INSTRUCTIONS      : CAN REPACK IN GRAINGER S CARTON
EXCEPTION                :
DOT/UPS EXEMPTION NO.    :
COMMENTS 1               : HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2               : ONLY ARROW UP LABEL(2S594) REQUIRED.
SHIPPING-PAPERS          : AUTOMATED BILL OF LADING REQUIRED FOR TRUCK SHIPMENTS.
PLACARD OFFERED ?  YES ( )     NO ( )    PLEASE MARK ONE
 :G TO ACCOMPANY SHIPMENT

********************************************************************************
```

PICK_REQ: **0151491595** Item: **5U708** HAZMAT: **5U708**

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

****

GRAINGER SHIPPING INFORMATION

STOCK #	: 5U708
MSDS #	: A4386
FREIGHT CODE	: 0800
DOT PROPER SHIP NAME	: CONSUMER COMMODITY, ORM-D
UPS RESTRICTIONS	: 20 LB. & UNDER REQUIRES 200 LB. BSC/32 ECT, 21 LB. & OVER REQUIRES 275 LB. BSC/44 ECT.
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	: ORM-D
	:
LIMITED QUANTITY	: Y
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
EXCEPTION	:
DOT/UPS EXEMPTION NO.	:
COMMENTS 1	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2	:
SHIPPING-PAPERS	: AUTOMATED BILL OF LADING REQUIRED FOR TRUCK SHIPMENTS.

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE

'G TO ACCOMPANY SHIPMENT

****

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PICK_REQ: **0151491595** ITEM: **5A268** HAZMAT: **5A268**

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

****

GRAINGER SHIPPING INFORMATION

STOCK #	: 5A268
MSDS #	: A4582
FREIGHT CODE	: 0204
DOT PROPER SHIP NAME	: COMBUSTIBLE LIQUID, (PAINT), NOT REGULATED BY THE DOT AS A HAZARDOUS MATERIAL PER 49 CFR 173.150(F)(2)
UPS RESTRICTIONS	:
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	:
	:
LIMITED QUANTITY	: N
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
EXCEPTION	:
DOT/UPS EXEMPTION NO.	:
COMMENTS 1	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2	: ONLY ARROW UP LABEL(2S594) REQUIRED.
SHIPPING-PAPERS	: AUTOMATED BILL OF LADING REQUIRED FOR TRUCK SHIPMENTS.

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE
G TO ACCOMPANY SHIPMENT

****

♦

PICK REQ: 0151491595 ITEM: 5A268 MSDS: A4582

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

AL SAFETY DATA SHEET - A4582

Associated Grainger Items

5A268

MATERIAL SAFETY DATA SHEET

------SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ------

PRODUCT NAME: SAFETY BLUE 9906306

IDENTIFICATION NUMBER: 0925 402

DATE PRINTED: 05/10/00

PRODUCT USE/CLASS: INDUSTRIAL ENAMEL

SUPPLIER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS
60061 USA

(847)367-7700 RUST-OLEUM CORP.:
8:00 AM-4:30 PM/24-HR EMER. ASSIST

MANUFACTURER:
RUST-OLEUM CORPORATION
11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS
60061 USA

(847)367-7700 RUST-OLEUM CORP.:
8:00 AM-4:30 PM/24-HR EMER. ASSIST

PREPARER: L.J.H.

PHONE: 847-816-2445

PREPARE DATE: 04/27/00

------SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS ------

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	PETROLEUM DISTILLATES	64742-47-8	35.0%
02	STODDARD SOLVENT	8052-41-3	15.0%
03	TITANIUM DIOXIDE	13463-67-7	5.0%
04	MIXED COBALT CARBOXYLATES	NOT AVAILABLE	1.0%

FIRST AID - SKIN CONTACT:
WASH WITH SOAP AND WATER. GET MEDICAL ATTENTION IF IRRITATION DEVELOPS OR PERSISTS.

EXPOSURE LIMITS

	ACGIH		OSHA		MEXICAN	
ITEM	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	N.E.	N.E.	N.E.	N.E.	N.E.	YES
02	100 PPM	N.E.	100 PPM	N.E.	100 PPM	NO
03	10 MG/M3	N.E.	15 MG/M3	N.E.	N.E.	NO
04	N.E.	N.E.	N.E.	N.E.	N.E.	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

------SECTION 3 - HAZARDS IDENTIFICATION ------

EMERGENCY OVERVIEW:

CAUSES EYE IRRITATION. VAPORS IRRITATING TO EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR. HARMFUL IF INHALED. MAY EFFECT THE BRAIN OR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION:
HARMFUL IF INHALED. MAY CAUSE HEADACHES AND DIZZINESS. HIGH VAPOR CONCENTRATIONS ARE IRRITATING TO THE EYES, NOSE, THROAT AND LUNGS.

EFFECTS OF OVEREXPOSURE - INGESTION:
SUBSTANCE MAY BE HARMFUL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:
REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANENT BRAIN AND NERVOUS SYSTEM DAMAGE. CONTAINS A COBALT COMPOUND. IARC LISTS COBALT AND COBALT COMPOUNDS AS POSSIBLE HUMAN CARCINOGENS (GROUP 2B). HOWEVER, THERE IS INADEQUATE EVIDENCE OF THE CARCINOGENICITY OF COBALT AND COBALT COMPOUNDS IN HUMANS AND LIMITED EVIDENCE IN EXPERIMENTAL ANIMALS.

PRIMARY ROUTE(S) OF ENTRY:
SKIN ABSORPTION:
INHALATION:
EYE CONTACT:

------SECTION 4 - FIRST AID MEASURES ------

FIRST AID - EYE CONTACT:
HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION.

STORAGE:
KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. KEEP AWAY FROM HEAT, SPARKS, FLAME AND SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE.

FIRST AID - INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION:

ASPIRATION HAZARD:

DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. GET IMMEDIATE MEDICAL ATTENTION.

------SECTION 5 - FIRE FIGHTING MEASURES ------

FLASH POINT: 104 F

(SETAFLASH CLOSED CUP)

LOWER EXPLOSIVE LIMIT: 0.6%

UPPER EXPLOSIVE LIMIT: 6.5%

AUTOIGNITION TEMPERATURE: NE

EXTINGUISHING MEDIA:

DRY CHEMICAL

FOAM

WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.

SPECIAL FIREFIGHTING PROCEDURES:

WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILDUP AND POSSIBLE AUTOIGNITION OR EXPLOSION. EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

------SECTION 6 - ACCIDENTAL RELEASE MEASURES ------

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

CONTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. DISPOSE OF ACCORDING TO LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

------SECTION 7 - HANDLING AND STORAGE ------

HANDLING:

WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES. AVOID BREATHING VAPOR OR MIST. AVOID CONTACT WITH EYES.

PHYSICAL STATE: LIQUID

COEFFICIENT OF WATER/OIL DISTRIBUTION: NE

VAPOR DENSITY: IS HEAVIER THAN AIR

ODOR THRESHOLD: NE

------SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION ------

ENGINEERING CONTROLS:

USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION:

A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. A NIOSH/MSHA APPROVED AIR PURIFYING RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION:

USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL THROUGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION.

EYE PROTECTION:

USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT:

REFER TO SAFETY SUPERVISOR OR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

HYGIENIC PRACTICES:

WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

------SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ------

BOILING RANGE: 318-383 F

ODOR: SOLVENT

APPEARANCE: LIQUID

SOLUBILITY IN H2O: INSOLUBLE

FREEZE POINT: ND

VAPOR PRESSURE: ND

------SECTION 13 - DISPOSAL CONSIDERATIONS ------

DISPOSAL METHOD:

DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AND ORDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

EVAPORATION RATE: IS SLOWER THAN ETHER

SPECIFIC GRAVITY: 0.9430

.0%: ND

VISCOSITY: >100 SUS

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

------SECTION 10 - STABILITY AND REACTIVITY ------

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY:
INCOMPATIBLE WITH STRONG OXIDIZING AGENTS, STRONG ACIDS AND STRONG ALKALIES.

HAZARDOUS DECOMPOSITION PRODUCTS:
BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE. WHEN HEATED TO DECOMPOSITION IT EMITS ACRID SMOKE AND IRRITATING FUMES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

------SECTION 11 - TOXICOLOGICAL PROPERTIES ------

ENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LC50
PETROLEUM DISTILLATES	>5000 MG/KG	NO INFORMATION
STODDARD SOLVENT	4900 MG/KG (RAT)	N.E.
TITANIUM DIOXIDE	24000 MG/KG RATS	6820 MG/KG RATS
MIXED COBALT CARBOXYLATES	1200-1600 MG/KG RAT	>5.0 MG/L RAT

------SECTION 12 - ECOLOGICAL INFORMATION ------

ECOLOGICAL INFORMATION:
PRODUCT IS A MIXTURE OF LISTED COMPONENTS. ACCORDING TO OUR RAW MATERIAL SUPPLIERS, ALL COMPONENTS ARE LISTED ON THE TSCA INVENTORY AS REQUIRED OR MEET THE POLYMER EXEMPTION AS DEFINED IN SECTION 5.5.2 OF THE TOXIC SUBSTANCES CONTROL ACT.

COMPONENTS IN THIS PRODUCT:

CHEMICAL NAME	CAS NUMBER
ALKYD RESIN SOLUTION	66071-01-0
ALKYD RESIN SOLUTION	66070-60-8

LVANIA RIGHT-TO-KNOW:
The FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

CHEMICAL NAME	CAS NUMBER

------SECTION 14 - TRANSPORTATION INFORMATION ------

DOT PROPER SHIPPING NAME: PAINT

DOT TECHNICAL NAME:

DOT HAZARD CLASS: 3

HAZARD SUBCLASS:

DOT UN/NA NUMBER: UN1263

PACKING GROUP: III

RESP. GUIDE PAGE: 127

------SECTION 15 - REGULATORY INFORMATION ------

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA:
HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:
THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA 'HAZARD CATEGORIES' PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:

IMMEDIATE HEALTH HAZARD:
CHRONIC HEALTH HAZARD:
FIRE HAZARD:

SARA SECTION 313:
THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS THAN
MIXED COBALT CARBOXYLATES	NOT AVAILABLE	1.0%

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:
THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE
THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: B3 D2B

------SECTION 16 - OTHER INFORMATION ------

HMIS RATINGS:
HEALTH : 2*
FLAMMABILITY: 2
REACTIVITY : 0

ALKYD RESIN SOLUTION 66071-01-0

ALKYD RESIN SOLUTION 66070-60-8

RNIA PROPOSITION 65:

WARNING:

THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

CHEMICAL NAME CAS NUMBER

ACCORDING TO OUR RAW MATERIAL SUPPLIERS NO PROPOSITION 65 CHEMICALS EXIST IN THIS PRODUCT ABOVE OSHA DE MINIMUS LEVELS. ALL PRODUCTS COMPLY WITH LABEL PROVISIONS OF PROPOSITION 65.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS:

PREVIOUS MSDS REVISION DATE: 04/12/00

REASON FOR REVISION: WHMIS CLASS ADDITION

LEGEND:

N.A.: NOT APPLICABLE

N.E.: NOT ESTABLISHED

N.D.: NOT DETERMINED

: NO INFORMATION.

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS.

PRODUCT: 0925 402

PREPARATION DATE: 04/27/00

PICK REQ: 0151491595 ITEM: 6H500 HAZMAT: 6H500

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

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GRAINGER SHIPPING INFORMATION

STOCK #	: 6H500
MSDS #	: A1020
FREIGHT CODE	: 0204
DOT PROPER SHIP NAME	: COMBUSTIBLE LIQUID, (PAINT), NOT REGULATED BY THE DOT AS A HAZARDOUS MATERIAL PER 49 CFR 173.150(F)(2)
UPS RESTRICTIONS	:
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	:
	:
LIMITED QUANTITY	: N
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
EXCEPTION	:
DOT/UPS EXEMPTION NO.	:
COMMENTS 1	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2	: ONLY ARROW UP LABEL(2S594) REQUIRED.
SHIPPING-PAPERS	: AUTOMATED BILL OF LADING REQUIRED FOR TRUCK SHIPMENTS.

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE

`G TO ACCOMPANY SHIPMENT

****

PICK_REQ: 0151491595 ITEM: 6H500 MSDS: A1020

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

\L SAFETY DATA SHEET - A1020

Associated Grainger Iteas

6H500

M A T E R I A L S A F E T Y D A T A S H E E T

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : HD RUST INHIBITIVE PR 9705605

IDENTIFICATION NUMBER: 1069 403

DATE PRINTED : 12/08/97

PRODUCT USE/CLASS : ERAMEL/ALKTD

SUPPLIER:	MANUFACTURER:
RUST-OLEUN CORPORATION	RUST-OLEUN CORPORATION
11 HAWTHORN PARKWAY	11 HAWTHORN PARKWAY
VERNON HILLS, ILLINOIS	VERNON HILLS, ILLINOIS
60061 USA	60061 USA
(847) 367-7700 RUST-OLEUM CORP.	(847) 367-7700 RUST-OLEUN CORP.
MON.-FRI, 8:00 AM-4:30 PM	MON.-FRI, S:OO AM-4:30 PM

PREPARER: LJW, PHONE: , PREPARE DATE: 06/11/97

SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THA
01	STODDARD SOLVENT	8052-41-3	15.0
02	CALCIUM CARBONATE	1317-65-3	10.0
03	1,3,5-TRIMETHYLBENZENE	108-67-8	5.0
04	1,2,4-TRIMETHYLBENZENE	95-63-6	5.0
	COBALT DRIER	136-52-7	0.1

EXPOSURE LIMITS

ITEM	ACOIH TLV-TWA	ACOIH TLV-STEL	OSHA PEL-TWA	OSHA PEL-CEILING	COMPANY TLV-TWA	SKI
01	100PPM	N.E.	100PPM	N.E.	N.E.	NO
02	10MG/M3	N.E.	15MG/M3	N.E.	N.E.	NO
03	25 PPM	N.E.	N.E.	N.E.	N.E.	NO
04	25 PPM	N.E.	N.E.	N.E.	N.E.	NO
05	N.E.	N.E.	N.E.	N.E.	N.E.	NO

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 3 - HAZARDS IDENTIFICATION

*** EMERGENCY OVERVIEW ***: HARMFUL IF SWALLOWED. CAUSES (TARGET ORGAN O SYSTEM) DAMAGE. CAUSES EYE IRRITATION. VAPORS IRRITATING TO EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPOR.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION: HARMFUL IF INHALED. MAY CAUSE HEADACHES AND DIZZINESS.

EFFECTS OF OVEREXPOSURE - INGESTION: SUBSTANCE MAY BE HARMFUL IF SWALLOWED. ASPIRATION HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS: REPORTS HAVE ASSOCIATED REPEATED AND PROLONGED OCCUPATIONAL OVEREXPOSURE TO SOLVENTS WITH PERMANEN BRAIN AND NERVOUS SYSTEM DAMAGE.

PRIMARY ROUTE(S) OF ENTRY: INHALATION EYE CONTACT

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

E PROTECTION: USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT: REFER TO SAFETY SUPERVISOR OR INDUSTRIAL

SECTION 4 - FIRST AID MEASURES

FIRST AID - EYE CONTACT: HOLD EYELIDS APART AND FLUSH WITH PLENTY OF WATE FOR AT LEASE 15 MINUTES. GET MEDICAL ATTENTION.

FIRST AID - SKIN CONTACT: WASH WITH SOAP AND WATER. GET MEDICAL ATTENTIO IF IRRITATION DEVELOPS OR PERSISTS.

FIRST AID - INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTION.

FIRST AID - INGESTION: ASPIRATION HAZARD: DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH BECAUSE THIS MATERIAL CAN ENTER THE LUNGS AND CAUSE SEVERE LUNG DAMAGE. GET IMMEDIATE MEDICAL ATTENTION.

SECTION 5 - FIRE FIGHTING MEASURES

FLASH POINT: 105 F LOWER EXPLOSIVE LIMIT: 0.9 %

UPPER EXPLOSIVE LIMIT: 6.4 %

AUTOIGNITION TEMPERATURE: NE

EXTINGUISHING MEDIA: DRY CHEMICAL FOAM WATER FOG

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.

SECTION 5 - FIRE FIGHTING MEASURES

SPECIAL FIREFIGHTING PROCEDURES: WATER MAY BE USED TO COOL CLOSED CONTAINERS TO PREVENT PRESSURE BUILDUP AND POSSIBLE AUTOIGNITION OR EXPLOSION. EVACUATE AREA AND FIGHT FIRE FROM A SAFE DISTANCE.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: CONTAIN SPILLE LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST. DISPOSE OF ACCORDING TO LOCAL, STATE (PROVINCIAL) AND FEDERAL REGULATIONS. DO NOT INCINERATE CLOSED CONTAINERS.

SECTION 7 - HANDLING AND STORAGE

HANDLING: WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. FOLLOW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CONTAINER IS EMPTIED BECAUSE IT MAY RETAIN PRODUCT RESIDUES. AVOID BREATHING VAPOR OR MIST. AVOID CONTACT WITH EYES.

STORAGE: KEEP CONTAINERS TIGHTLY CLOSED. ISOLATE FROM HEAT, ELECTRICAL EQUIPMENT, SPARKS AND OPEN FLAME. KEEP AWAY FROM HEAT, SPARKS, FLAME AND SOURCES OF IGNITION. KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: USE PROCESS ENCLOSURES, LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO CONTROL AIRBORNE LEVELS BELOW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOORS AND WINDOWS TO ACHIEVE CROSS-VENTILATION.

RESPIRATORY PROTECTION: A RESPIRATORY PROTECTION PROGRAM THAT MEETS OSHA 1910.134 AND ANSI 288.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WORKPLACE CONDITIONS WARRANT A RESPIRATOR'S USE. A NIOSH/MSHA APPROVED AIR PURIFYIN RESPIRATOR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCUMSTANCES WHERE AIRBORNE CONCENTRATIONS ARE EXPECTED TO EXCEED EXPOSURE LIMITS. PROTECTION PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRATOR IF THERE IS ANY POTENTIAL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCUMSTANCES WHERE AIR PURIFYING RESPIRATORS MAY NOT PROVIDE ADEQUATE PROTECTION.

SKIN PROTECTION: USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTION OF THIS MATERIAL THROUGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFFORD ADEQUATE SKIN PROTECTION.

SARA SECTION 313:

THIS PRODUCT CONTAINS THE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1966 AND 40 CFR PART 372:

HYGIENIST FOR FURTHER INFORMATION REGARDING PERSONAL PROTECTIVE EQUIPMENT AND ITS APPLICATION.

HYGIENIC PRACTICES: WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE	: 318 - 383 F	VAPOR DENSITY	: IS HEAVIER THAN AIR
ODOR	: SOLVENT	ODOR THRESHOLD	: NE
APPEARANCE	: LIQUID	EVAPORATION RATE:	IS SLOWER THAN ETHE
SOLUBILITY IN H30	: SLIGHT		
FREEZE POINT	: ND	SPECIFIC GRAVITY:	1.3816
VAPOR PRESSURE	: ND	PB @ 0.0 %	: ND
PHYSICAL STATE	: LIQUID	VISCOSITY	: >100 SUS

COEFFICIENT OF WATER/OIL DISTRIBUTION: NE

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY: INCOMPATIBLE WITH STRONG OXIDIZING AGENTS, STRONG ACIDS AND STRONG ALKALIES.

HAZARDOUS DECOMPOSITION PRODUCTS: BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

SECTION 11 - TOXICOLOGICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

---------- CHEMICAL NAME ----------	------ LD50 ------	------ LC50 -----
STODDARD SOLVENT	4900MG/KG(RAT)	N.E.
CALCIUM CARBONATE	NONE	NONE
1,3,5-TRIMETHYLBENZENE	RAT 1303MG/KG	RAT 24MG/M^3 4HR
1,2,4-TRIMETHYLBENZENE	N.E.	RAT 18G/M^3 4HR
COBALT DRIER	NA	NA

SECTION 11 - TOXICOLOGICAL PROPERTIES

SECTION 12 - ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: PRODUCT IS A MIXTURE OF LISTED COMPONENTS.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: DISPOSE OF MATERIAL IN ACCORDANCE TO LOCAL, STATE AND FEDERAL REGULATIONS AND ORDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

SECTION 14 - TRANSPORTATION INFORMATION

NO TRANSPORTATION INFORMATION IS AVAILABLE.

SECTION 15 - REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA: HAZARDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)

CERCLA - SARA HAZARD CATEGORY:

THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA "HAZARD CATEGORIES" PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:

IMMEDIATE HEALTH HAZARD CHRONIC HEALTH HAZARD FIRE HAZARD

---------- CHEMICAL NAME ----------	CAS NUMBER	WT/WT % IS LESS THAN
1,2,4-TRIMETHYLBENZENE	95-63-6	5.0 %
XYLENE	1330-20-7	1.0 %
ETHYLBENZENE	100-41-4	0.1 %

TOXIC SUBSTANCES CONTROL ACT:

SECTION 15 - REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

THIS PRODUCT CONTAINS THE FOLLOWING CHEMICAL SUBSTANCES SUBJECT TO THE REPORTING REQUIREMENTS OF TSCA 12(B) IF EXPORTED FROM THE UNITED STATES:

---------- CHEMICAL NAME ----------	CAS NUMBER

NO INFORMATION IS AVAILABLE.

U.S. STATE REGULATIONS: AS FOLLOWS -

NEW JERSEY RIGHT-TO-KNOW:

THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE COMPONENTS IN THIS PRODUCT:

---------- CHEMICAL NAME ----------	CAS NUMBER
MAGNESIUM SILICATE HYDRATE	14807-96-6
ALKYD RESIN	66070-60-8
ALKYD RESIN-TRADE SECRET	MIXTURE

PENNSYLVANIA RIGHT-TO-KNOW:

THE FOLLOWING NON-HAZARDOUS INGREDIENTS ARE PRESENT IN THE PRODUCT AT GREATER THAN 3%:

---------- CHEMICAL NAME ----------	CAS NUMBER
MAGNESIUM SILICATE HYDRATE	14807-96-6
ALKYD RESIN	66070-60-8
ALKYD RESIN-TRADE SECRET	MIXTURE
BROWN IRON OXIDE	1309-37-1
CHEMICAL COMPOSITE	66402-68-4
HYDRTREATED LIGHT DISTILLATE	64742-47-8

CALIFORNIA PROPOSITION 65:

WARNING: THE CHEMICAL(S) NOTED BELOW AND CONTAINED IN THIS PRODUCT, ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM:

---------- CHEMICAL NAME ----------	CAS NUMBER

NO PROPOSITION 65 CHEMICALS EXIST IN THIS PRODUCT.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS: THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CONTROLLED PRODUCT REGULATIONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: NO INFORMATION AVAILABLE.

SECTION 16 - OTHER INFORMATION

HMIS RATINGS - HEALTH: FLAMMABILITY: REACTIVITY:

PREVIOUS MSDS REVISION DATE: 04/10/97

SECTION 16 - OTHER INFORMATION

LEGEND: N.A. - NOT APPLICABLE, N.E. - NOT ESTABLISHED,
N.D. - NOT DETERMINED

: NO INFORMATION.

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURATE. HOWEVER, IT IS THE RESPONSIBILITY OF THE USER TO COMPLY WITH ALL

PICK_REQ: **0151491595** ITEM: **5H902** HAZMAT: **5H902**

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

****

GRAINGER SHIPPING INFORMATION

STOCK #	: 5H902
MSDS #	: A4688
FREIGHT CODE	: 0800
DOT PROPER SHIP NAME	: CONSUMER COMMODITY, ORM-D
UPS RESTRICTIONS	: 20 LB. & UNDER REQUIRES 200 LB. BSC/32 ECT, 21 LB. & OVER REQUIRES 275 LB. BSC/44 ECT.
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	: ORM-D
	:
LIMITED QUANTITY	: Y
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
EXCEPTION	:
DOT/UPS EXEMPTION NO.	:
COMMENTS 1	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2	:
SHIPPING-PAPERS	: AUTOMATED BILL OF LADING REQUIRED FOR TRUCK SHIPMENTS.

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE

[illegible]G TO ACCOMPANY SHIPMENT

****

◆

Material Safety Data Sheet

Devcon.

DEVCON CORPORATION/30 ENDICOTT STREET/DANVERS, MASSACHUSETTS 01923/(617) 777-1100

H HEALTH	1
F FLAMMABILITY	1
R REACTIVITY	1

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

SECTION 1 - IDENTITY AND EMERGENCY INFORMATION

TRADE NAME: PLASTIC STEEL 5-MINUTE PUTTY (SF) - RESIN

EMERGENCY TELEPHONE NO. (617) 777-1100

CHEMICAL FAMILY: FILLED EPOXY RESIN

OTHER INFORMATION CALLS: DEVCON SAFETY DEPT. (617) 777-1100

OTHER PRODUCT INFORMATION: The following health hazard data pertain to the resin only. When mixed with the hardener, uncured material should be handled in accordance with the precautions recommended on the hardener Material Safety Data Sheet.

SECTION 2 - HAZARDOUS INGREDIENTS

INGREDIENTS	CAS NUMBER	%	NATURE OF HAZARD
No Hazardous Ingredients			

SECTION 3. PHYSICAL DATA

BOILING POINT (F.)	n.a.	VAPOR DENSITY (AIR = 1)	> 1	EVAPORATION RATE (BuAc = 1)	n.a.
MELTING POINT (F.)	n.a.	SPECIFIC GRAVITY	2.8	SOLUBILITY IN WATER	Nil
VAPOR PRESSURE (mm Hg.)	Nil @ 78°F	PRECENT VOLATILE BY VOLUME (%)	0	pH (5 wt. % in H_2O)	7.0

APPEARANCE AND ODOR: Dark gray paste, low odor.

SECTION 4. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT (F.) (Method Used)	FLAMMABLE LIMITS IN AIR	LEL	UEL
> 400°F PMCC		n.a.	n.a.

EXTINGUISHED MEDIA: CO_2 or dry chemicals. Polymer foams for large fires.

SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS: None

SECTION 5. HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES

EYES: Flush with water for 15 minutes. Get medical attention.

SKIN: Wash with soap and warm water. Get medical attention if irritation develops.

INGESTION: Do not induce vomiting. Administer 2 glasses of water. Get medical advice.

INHALATION: Remove to fresh air. Administer oxygen if breathing is difficult. Get medical attention.

SECTION S. HEALTH HAZARD DATA (Continued)

THRESHOLD LIMIT VALUE	ORAL LD_{50} (RAT)	DERMAL LD_{50} (RABBIT)	INHALATION LC_{50} (RAT)
Not established	Epoxy Resin 11.4g/kg	Epoxy Resin > 20g/kg	Epoxy Resin No deaths in sat'd air for 8 hours.

ROUTE OF EXPOSURE — EFFECTS OF OVEREXPOSURE

ACUTE:

EYES: Mild irritation

SKIN: Mild irritation

INHALATION: No data

CHRONIC: Approximately 1% of workers are potentially skin sensitizable.

PLASTIC SEALS MIN. VOL.

SECTION 6. REACTIVITY DATA

STABILITY	UNSTABLE		CONDITIONS TO AVOID
	STABLE	X	Open flame and excessive heat.

INCOMPATIBILITY (Materials to Avoid): Strong oxidizing agents and strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon, aldehydes & acids from incomplete combustion.

HAZARDOUS POLYMERIZATION	MAY OCCUR		CONDITIONS TO AVOID
	WILL NOT OCCUR	X	Heat is generated when mixed with epoxy hardener. Use caution when mixing large quantities.

SECTION 7. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Prevent skin and eye contact. Scrape up and discard in suitable containers. Use absorbent material if necessary. Wash spill area with an industrial cleaning agent. If a solvent is used for cleaning take precautions against fire and personal overexposure.

WASTE DISPOSAL METHOD

Remove to a waste disposal facility operating in compliance with state and local regulations.

SECTION 8. SPECIAL PROTECTION INFORMATION

EYES: Safety glasses with side shields

SKIN: Chemical resistant rubber gloves and other protective clothing as required to prevent skin contact.

INHALATION: None required at normal handling temperatures.

VENTILATION

Local exhaust is recommended for confined areas. General ventilation is adequate for normal use.

SECTION 9. SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING, STORING, ETC.

Store in a cool, dry place. Handle in accordance with the potential hazard of the curing agent used.
Remove contaminated clothing and protective gear. Launder or clean before re-use.
Destroy leather articles, including shoes that cannot be decontaminated. Wash thoroughly after using - particularly before eating or smoking.
If cured material is sanded or machined, use proper precautions. Wear adequate protective equipment to prevent overexposure to nuisance particulates.

D.O.T. PROPER SHIPPING NAME: Non-regulated

D.O.T. HAZARD CLASS (IF APPLICABLE): _____

DATE: October 1985

Item: 5A266 - PAINT NAVY GRAY 1 G

PICK_REQ: 0176740239 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A4636**

This MSDS should be attached or kept with the respective product with which it is associated.

RIAL SAFBTY DATA SHEET - A4636

iated OraInger Item: 5A266 - PAINT NAVY GRAY 1 O

MATERIAL SAFETY DATA SHEET

SECTION 1 - CBEICAL PRODDCT AND CCHPANY IDENTIFICATION

PRODUCT NAME: NAVY GRAY 9905839

IDENTIFICATION NUMBER: 0975 402

DATE PRINTED: 05/10/00

PRODUCT USE/CLASS: INDUSTRIAL ENAMEL

SUPPLIER:
RUST-OLEUM CORPORATION
11 HAWIHORN PARKWAY
VERNON HILLS, ILLINOIS 60061
USA

(847)367-7700 RUST-OLEUM CORP.
8:00 AM - 4:30 PM/24-HR EMER. ASSIST

MANUFACTURER:
RUST-OLEUM CORPORATION
11 HAWIHORN PARKWAY
VERNON HILLS, ILLINDIS 60061
USA

(847)367-7700 RUST-OLEUM CORP.
8:00 AM - 4:30 PM/24-HR EMER. ASSIST

PREPARER: L.J.W.
PHCNE: 847-816-2445
PREPARE DATE: 04/27/00

SECTION 2 - CCHFOSITION/INFORMATION ON INGREDIENTS

ITEM	CHEMICAL NAME	CAS NUMBER	WT/WT % LESS THAN
01	PETROLEUM DISTILLATES	64742-47-8	40.0%
02	STODDARD SOLVENT	8052-41-3	15.0%
03	TITANIUM DIOXIDE	13463-67-7	5.0%
04	CARBON BLACK	1333-86-4	1.0%
05	MIXED COBALT CARBOXYLATES	NOT AVAILABLE	1.0%

	EXPOSURE LIMITS					
	ACGIH		OSHA		MEXICAN	
	TLV-TWA	TLV-STEL	PEL-TWA	PEL-CEILING	TLV-TWA	SKIN
01	N.E.	N.E.	N.E.	N.E.	N.E.	YES
02	100 PPM	N.E.	100 PPM	N.E.	100 PPM	NO
03	10 M3/M3	N.E.	IS MG/M3	N.E.	N.E.	NO
04	3.5 M3/M3	N.E.	3.5 M3/M3	N.E.	N.E.	NO
05	N.E.	N.E.	N.E.	N.E.	N.E.	NO

(SEE SECTICN 16 FOR ABBREVIATICN LEGEND)

SECTION 3 - HAZABDS IDENTIFICATION

EMERGENCY OVERVIEW:
CAUSES EYE IRRTDATICN. VAPORS IRRITATING TO EYES AND RESPIRATORY TRACT. COMBUSTIBLE LIQUID AND VAPCR. HARMFUL IF INHALED. MAY EFFECT THE BRAIN CR NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA.

EFFECTS OF OVEREXPOSURE - EYE CONTACT: CAUSES EYE IRRITATION.

EFFECTS OF OVEREXPOSURE - SKIN CONTACT: MAY CAUSE SKIN IRRITATION.

EFFECTS OF OVEREXPOSURE - INHALATION:
HARMFUL IF INHALED. MAY CAUSE HEADACHES AND DIZZINESS. HIGH VAPOR CONCENTRATIONS ARE IRRITATING TO THE EYES, NOSE, THROAT AND LUNGS.

EFFECTS OF OVEREXPOSURE - INGESTION:
SUBSTANCE MAY BE HARMFUL IF SWALLOWED. ASPIRATICN HAZARD IF SWALLOWED; CAN ENTER LUNGS AND CAUSE DAMAGE.

EFFECTS OF OVEREXPOSURE - CHRONIC HAZARDS:
REPCRTS HAVE ASSOCIATED REPEATED AND PRDLCNGED OCCUPATICNAL OVEREXPOSURE TO SOLVENTS WTIH PERMANENT BRAIN AND NERVDUB SYSTEM DAMAGE. CENDAINS CARBON BLACK. CHRCNIC INFLAMMATION, LUNG FIBROSIS, AND LUNG TUMDRS HAVE BEEN CBSERVED IN SOME RATS EXPERIMENTALLY EXPOSED FOR LCNG PERICDS OF TIME TO EXCESSIVE CCNCENIRATIONS OF CARBCW BLACK AND SEVERAL INSOLUBLE FINE DUST PARTICLES. IUMORS HAVE NOT BEEN CBSERVED IN OIHER ANIMAL SPECIES (I.E., MOUSE AND HAMPSTER) UNDER SIMILAR CIRCUMSTANCES AND STUDY CONDITIONS. EPIDEMIOLOGICAL STUDIES OF NORTH AMERICAN WORKERS SHOW NO EVIDENCE OF CLINICALLY SIGNIFICANT ADVERSE HEALTH EFFECIS DUE TO OCCUPATICNAL EXPOSURE TO CARBON BLACK. CARBON BLACK IS LISTED AS A GROUP 2B- "POSSIBLY CARCINOGENIC TO HCMANS" BY IARC AND IS PROPOSED TO BE LISTID AS A4 - "NOT CLASSIFIED AS A HUMAN CARCINOGEN" BY THE AMERICAN CINFERENCE OF COVERNMEHTAL INDUSTRIAL HYGIEMISIS. SIGNIFICANT EXPOSURE IS NOT ANTICIPAIED DURING BRUSH APPLICATICN OR DRYING. RISK OF OVEREXPOSURE DEPENDS CN DURATICN AND LEVEL OF EXPOSURE TO DUST ERCM REPEATED SANDING OF SURFACES OR SPRAY MIST AND THE ACIUAL CONCENIRATION OF CARBCN BLACK IN THE ECRMULA. CONIAINS A CCBALT CCMPOUND. IARC LISTS CEBALT AND CEBALT CCMPOUNDS AS AS POSSIBLE HLMAN CARCINOGENS (GROUP 2B). HCWEVER, THERE IS INADEQUATE EVTIENCE OF THE CABCINOGENICITY OF COBAUT AND COBALT OCMPOUNDS IN HUMANS LMITKD EVIDKNUE IN EXPERIMENTAL ANIMALS.

ARY ROUTE(S) OF ENIRY: SKIN ABSORPTION, INHALATION, EYE CONTACT.

SECTION 4 - FIBST AID MEASURES

FIRST AID - EYE CONTACT:
HOLD EYELIDS APART AND FLUSH WTIH PLENTY OF WAIER EOR AT LEAST IS MINUTES. GET MEDICAL ATIENTION.

FIRST AID - SKIN CONTACT:
WASH WITH SOAP AND WATER. CST MEDICAL ATIENTICN IF IRRTDATICN DEVELOPS CR PERSISTS.

FIRST AID - INHALATION:
REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATICN. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET IMMEDIATE MEDICAL ATTENTICN.

FIRST AID - INGESTION:
ASPIRATION HAZARD:
DO NOT INDUCE VCMITING CR GIVE ANYTHING BY MOUIH BECAUSE THIS MAIERIAL CAN ENIER THE LUNGS AND CAUSE SEVERE LUM3 DAMAGE. GET IMMEDIATE MEDICAL AITEMTION.

SECTION 5 - FIRB FRJETING MEASURES

FLASH POINT: 102 F

(SETAFLASH CLOSED CUP)

LOWER EXPLOSIVE LIMIT: 0.6%
UPPER EXPLOSIVE LIMIT: 6.5%

AUTOIGNITICN TEMPERATURE: NE

EXTINGUISHING MEDIA: DRY CHEMICAL, FOAM, WATER FOG.

UNUSUAL FIRE AND EXPLOSION HAZARDS: KEEP CONTAINERS TIGHTLY CLOSED.

SPECIAL FIREFIGHTING PROCEDURES:
WAIER MAY EE USED TO COOL CLOSED CONIAINERS TO PREVENT PRESSURE BUILDUF AND POSSIBLE AUIDIGNITICN CR EXELOSICN. EVACURTE ARBA AND ETCHI FIRE FRCM A SAFE DISTANCE.

SECTICH 6 - ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
CCNTAIN SPILLED LIQUID WITH SAND OR EARTH. DO NOT USE COMBUSTIBLE MAIERIALS SUCH AS SAWDORT. DISPOSE OF ACCOHDIEB TO LOCRL, SIMIE (PROVINCIAL) AND FEDERAL REGULATIONS. DO HOT INCINERATE CLOSED CONTAIBERS.

SECTION 7 - HANDLING AND STORAGE

HANDLING:
WASH THOROUGHLY AFTER HANDLING. WASH HANDS BEFORE EATING. POLICW ALL MSDS/LABEL PRECAUTIONS EVEN AFTER CINTAINER IS EMETIED BECAUSE IT MAY RETAIN PRUUCT RESIDUES. AVOID BREATHING VAPCR OR MIST. AVOID CONTACT WITH EYES.

STORAGE:
KEEP OCNDAINERS TIGHILY CLOSED. ISOLAIE ERCM HEAT, ELECIRICAL EQUIPMENT, SPARKS AND OPEN EIAME. KEEP AHAY FRCM HEAT, SPARKS, FLAME AND SOURCES OF IGNITICN. KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION 8 - EXFOSDEE CONTROLS/FERSONAL PROTECTICM

ENGINEERING CONIBOLS:
USE PROCESS ENCLCSURES, LOCAL EXHALET VENTILATICM, CR OTHER ENGINEERING CENTROLS TO CENIBOL AIRBORNE LEVELS HELCW RECOMMENDED EXPOSURE LIMITS. PREVENT BUILD-UP OF VAPORS BY OPENING ALL DOCES AND WINDOWS TO ACHIEVE CROSS-VENTILATTON.

RESPIRATORY PROTECTION:
A RESPIRATCRY PRDIECTICH PROGRAM THAT MEETS OSHA 1910.134 AND ANSI Z88.2 REQUIREMENTS MUST BE FOLLOWED WHENEVER WDRKPLACE CCNDITIONS WARRAMT A RESPIRAICR'S USE. A NIOSH/MSHA APPROVED AIR PURIFYIHG RESPIRAICR WITH AN ORGANIC VAPOR CARTRIDGE OR CANISTER MAY BE PERMISSIBLE UNDER CERTAIN CIRCLMSIANCES WHERE AIRBORNE OCNCENIRATIONS ARE EXPECTKU TO EXCEED EXPOSURE LDMITS. PROIECTICN PROVIDED BY AIR PURIFYING RESPIRATORS IS LIMITED. USE A POSITIVE PRESSURE AIR SUPPLIED RESPIRAICR IF THERE IS ANY PQIENTIRL FOR AN UNCONTROLLED RELEASE, EXPOSURE LEVELS ARE NOT KNOWN, OR ANY OTHER CIRCLMSTANCES WHERE AIR PURIFYING RESPIRATCRS MAY NOT PROVIIE ADEQUATE PROTECTION.

SKIN PROTECTION:
USE IMPERVIOUS GLOVES TO PREVENT SKIN CONTACT AND ABSORPTICN OF THIS MATERIAL THROXGH THE SKIN. NITRILE OR NEOPRENE GLOVES MAY AFTORD ADEQUATE SKIN PROTECTION.

EYE PROTECTICN:
USE SAFETY EYEWEAR DESIGNED TO PROTECT AGAINST SPLASH OF LIQUIDS.

OTHER PROTECTIVE EQUIPMENT:
REFER TO SAFETY SUPERVISOR CR INDUSTRIAL HYGIENIST FOR FURTHER INFORMATION REGARDING PERSCNAL PROTECTIVE EQUIPMENT AND ITS APPLICATTON.

HYGIENIC PRACTICES:
WASH THOROUGHLY WITH SOAP AND WATER BEFORE EATING, DRINKING OR SMOKING.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

BOILING RANGE: 318-383 F

ODOR: SOLVENT

APPEARANCE: LIQUID

SOLUBILITY IN H2O: INSOLUBLE

FREEZE POINT: ND

VAPOR PRESSURE: ND

PHYSICAL STATE: LIQUID

VAPOR DENSITY: IS HEAVIER THAN AIR

ODOR THRESHOLD: NE

EVAPORATION RATE: IS SLOWER THAN ETHER

SPECIFIC GRAVITY: 0.9348

0.0%: ND

JSITY: >100 SUS

COEFFICIENT OF WATER/OIL DISTRIBUTION: NE

(SEE SECTION 16 FOR ABBREVIATION LEGEND)

SECTION 10 - STABILITY AND REACTIVITY

CONDITIONS TO AVOID: AVOID ALL POSSIBLE SOURCES OF IGNITION.

INCOMPATIBILITY:
INCCMPATIBLE WITH STRONG OXIDIZING A3ENIB, SIRCNG ACIDS AND SIRON3 ALKALIES.

HAZAREOUS DECCMPOSITION PRODUCTS:
BY OPEN FLAME, CARBON MONOXIDE AND CARBON DIOXIDE. WHEN HEATED TO DECOMPOSITION IT EMITS ACRID SMOKE AND IRRITATING FUMES.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR UNDER NORMAL CONDITIONS.

STABILITY: THIS PRODUCT IS STABLE UNDER NORMAL STORAGE CONDITIONS.

SECTION 11 - TOXICOLOOICAL PROPERTIES

COMPONENT TOXICOLOGICAL INFORMATION:

CHEMICAL NAME	LD50	LCSC
PETROLEUM DISTILLATES	>5000 M3/KG	NO INFORMATION
STODDARD SOLVENT	4900 M3/KG (RAT)	N.E.
TITANIUM DIOXIDE	24000 M3/KG RATS	6820 M3/M3 RATS
CARBON BLACK	N.A.	N.A.
MIXED C3BALT CARBOXYLATES	1200-1600 M3/KG RAT	>S.C M3/L RAT

SECTION 12 - ECCIOGICAL INFORMAIION

ECOLOGICAL INFORMATION:
PRCDOCT IS A MIXTURE OF LISIED CCMPCNEWTS. ACCORDING TO OUR RAW MAIERIAL SUPPLIERS, ALL CCMPONENTS ARE LISTED ON THE TSCA INVENIURY AS REQUIRED CR MEET THE POLYMER EXEMPTION AS DEFINED IN SECTICN 5.5.2 OF IHE TOXIC SUBSTANCES CONTROL ACT.

SECTION 13 - DISPOSAL CONSIDERATIONS

DISPOSAL METHOD:
DISPOSE OF MAIERIAL IN ACCORDANCE TO LOCAL, STAIE AND FEDERAL REGUIATIONS A' 'RDINANCES. DO NOT ALLOW TO ENTER STORM DRAINS OR SEWER SYSTEMS.

SECTION 14 - TRANSFORTATION INFORHATION

DOT PROPER SHIPPING NAME: PAINT

DOT TECHNICAL NAME:

DOT HAZARD CLASS: 3

HAZARD SUBCLASS:

DOT UN/NA NUMBER: UN1263

PACKING GROUP: III

RESP. GUIDE PAGE: 127

SECTION 15 - REGULATORY INFORHATIGN

U.S. FEDERAL REGULATIONS: AS FOLLOWS -

OSHA:
HAZARDOUS BY DEFINTITION OF HAZARD COMMUNICAITCN STANDARD (29 CER 1910.1200)

CERCLA - SARA HAZARD CATEGORY:
IHIS PRODOCT HAS BEEN REVIEWED ACCORDING TO IHE EPA 'HAZARD CAIBGORIES' PRCMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENEMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:
IMMEDIATE HEALIH HAZARD, CHRONIC HEALTH HAZARD, FIRE HAZARD.

SARA SECTICN 313:
IHIS PRCDUCT OGNTAINS IHE FOLLOWING SUBSTANCES SUBJECT TO THE REPORTING EEQUIREMENTS OF SECTICN 313 OF TITLE III OF THE SUPERFUND AMENEMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372:

CHEMICAL NAME	CAS NUMBER	WT/WT % IS LESS IHAN
MIXED COBALT CARBOXYLATES	NOT AVAILABLE	1.0%

U.S. STATE REGULATIONS: AS FOLLCWS -

NEW JERSEY RIGHT-TO-KNOW:
THE FOLLOWING MATERIALS ARE NON-HAZARDOUS, BUT ARE AMONG THE TOP FIVE CCMPCNENTS IN THIS PRODUCT:

CHEMICAL NAME	CAS NUMBER
A' 'D RESIN SOLOTICN	66071-01-0
RESIN SOLOTICW	66070-60-8

P..SYLVANIA RIGHT-TO-KNOW:
THE FOLLOWING NON-HAZARDOUS INGREDIEMTS ARE PRESENT IN THE PRODUCT AT GREATER IHAN 3%:

CHEMICAL NAME	CAS NUMBER
ALKYD RESIN SOLUTICN	66071-01-0
ALKYD RESIN SOLOTICN	66070-60-8

CALIFORNIA PROPOSITICN 65:
WARNING!
THE CHEMICAL(S) NDIED BELOW AND UUNIAINED IN THIS PRCDUXT, ARE KNCWN TO IHE STAIE OF CALIFCRNIA TO CAUSE CANCER, BIRTH DEFECTS CR OIHER REPRODUCTIVE HARM:

CHEMICAL NAME	CAS NUMBER

ACCORDING TO OUR RAW MATERIAL SUPPLIERS NO PROPOSITICN 65 CHEMICALS EXIST DN THIS PRODUCT ABOVE OSHA DE MINIMJS LEVELS. ALL PRCDUCTS CCMPLY WITH LABEL PROVISIONS OF PROPOSITION 65.

INTERNATIONAL REGULATIONS: AS FOLLOWS -

CANADIAN WHMIS:
THIS MSDS HAS BEEN PREPARED IN COMPLIANCE WITH CCNTROLLED PRODUCT REGULAITONS EXCEPT FOR USE OF THE 16 HEADINGS.

CANADIAN WHMIS CLASS: B3 D2B.

SECTIOH 16 - OIBER INFORMATION

HMIS RATINGS:
HEALTH : 2*
FLAMMABILITY: 2
REACTIVITY : 0

PREVIOUS MSDS REVISION DATE: 04/12/00

REASON FOR REVISION: WHMIS CLASS ADDITION

LEGEND:
N.A.: NOT APPLICABLE
N.E.: NOT ESTABLISHED
N.D.: NOT DETERMINED
: NO INPORMATION.

THE INFORMATION CONTAINED ON THIS MSDS HAS BEEN CHECKED AND SHOULD BE ACCURAIE. HOWEVER, IT IS THE RESPONSIBTLITY OF THE USER TO CCMPLY WITH ALL FEDERAL, SIAIE, AND LCXAL IAWS AND REGULATIONS.

PRODUCT: 0975 402
PREPARATION DATE: 04/27/00

PICK REQ: 0176740239 ITEM: 5A266 HAZMAT: 5A266

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

****

GRAINGER SHIPPING INFORMATION

STOCK #	: 5A266
MSDS #	: A4636
FREIGHT CODE	: 0213
DOT PROPER SHIP NAME	: COMBUSTIBLE LIQUID, (PAINT), NOT REGULATED BY DOT AS A HAZARDOUS MATERIAL PER 49CFR 173.150(F)(2), FLASHPOINT 40 DGS C, 104 DGS F
UPS RESTRICTIONS	:
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	:
	:
LIMITED QUANTITY	: N
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
EXCEPTION	:
DOT/UPS EXEMPTION NO.	:
COMMENTS 1	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2	: ONLY ARROW UP LABEL (2S594) REQUIRED.
SHIPPING-PAPERS	: AUTOMATED BILL OF LADING REQUIRED ON TRUCK SHIPMENTS.

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE

TO ACCOMPANY SHIPMENT

****

KOPPERS

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

KOPPERS INC.
436 SEVENTH AVENUE
PITTSBURGH, PA 15219-1800

MEDICAL EMERGENCIES: 877-737-9047
MEDICAL EMERGENCIES OUTSIDE U.S.A.: 651-632-9269
TECHNICAL ASSISTANCE: 412-227-2001
MSDS REQUESTS: 866-852-5239
CHEMTREC ASSISTANCE: 800-424-9300
CANUTEC: 613-996-6666

MSDS NUMBER: 00228333

SUBSTANCE: CARBON PITCH TYPE A

TRADE NAMES/SYNONYMS:
INDUSTRIAL PITCH / COAL TAR PETROLEUM; CARBON PITCH TYPE A - SOLID; CARBON PITCH TYPE A - LIQUID; CARBON PITCH CO-DISTILLED TYPE A; COAL TAR PITCH; PENCIL PITCH TYPE A

CHEMICAL FAMILY: hydrocarbons, coal-tar

PRODUCT USE: process chemical

REVISION DATE: Aug 24 2006

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT: HIGH TEMPERATURE COAL TAR PITCH
CAS NUMBER: 65996-93-2
PERCENTAGE: 70-100

COMPONENT: PETROLEUM PITCH
CAS NUMBER: 68187-58-6
PERCENTAGE: 0-30

COMPONENT: BENZO(A)PYRENE
CAS NUMBER: 50-32-8
PERCENTAGE: 1.11-1.42

COMPONENT: BENZO(G,H,I)PERYLENE

CAS NUMBER: 191-24-2
PERCENTAGE: 0.88-1.30

COMPONENT: FLUORANTHENE
CAS NUMBER: 206-44-0
PERCENTAGE: 0.77-1.27

COMPONENT: PYRENE
CAS NUMBER: 129-00-0
PERCENTAGE: 0.67-1.19

COMPONENT: INDENO(1,2,3-CD)PYRENE
CAS NUMBER: 193-39-5
PERCENTAGE: 0.97-1.15

COMPONENT: L2-BENZANTHRACENE
CAS NUMBER: 56-55-3
PERCENTAGE: 0.71-1.04

COMPONENT: 1,2-BENZPHENANTHRENE
CAS NUMBER: 218-01-9
PERCENTAGE: 0.72-1.03

COMPONENT: BENZO(B)FLUORANTHENE
CAS NUMBER: 205-99-2
PERCENTAGE: 0.72-0.92

COMPONENT: DIBENZO(A,H)PYRENE
CAS NUMBER: 189-64-0
PERCENTAGE: 0.50-0.81

COMPONENT: BENZO(J)FLUORANTHENE
CAS NUMBER: 205-82-3
PERCENTAGE: 0.51-0.66

COMPONENT: BENZO(K)FLUORANTHENE
CAS NUMBER: 207-08-9
PERCENTAGE: 0.48-0.62

COMPONENT: DIBENZO(A,E)PYRENE
CAS NUMBER: 192-65-4
PERCENTAGE: 0.26-0.50

COMPONENT: DIBENZO(A,I)PYRENE
CAS NUMBER: 189-55-9
PERCENTAGE: 0.16-0.44

COMPONENT: DIBENZ(A,H)ANTHRACENE
CAS NUMBER: 53-70-3
PERCENTAGE: 0.22-0.30

COMPONENT: CARBAZOLE
CAS NUMBER: 86-74-8
PERCENTAGE: 0.02-0.10

NFFA RATINGS (SCALE 0-4): HEALTH=2 FIRE=1 REACTIVITY=0

EMERGENCY OVERVIEW:
COLOR: black
PHYSICAL FORM: changes from solid to liquid as temperature increases
ODOR: coal tar odor
SIGNAL WORD: WARNING!
MAJOR HEALTH HAZARDS: respiratory tract irritation, skin irritation, eye irritation, lung cancer, skin cancer, bladder cancer, scrotal cancer, (See Section 11 for additional information on potential hazards of constituents of the product.)
PRECAUTIONARY STATEMENTS: Do not breathe vapor or fumes. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation. Observe good hygiene and safety practices when handling this product. Do not use this product until the MSDS has been read and understood.

POTENTIAL HEALTH EFFECTS:
INHALATION:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: changes in body temperature, vomiting, difficulty breathing, headache, drowsiness, dizziness, loss of coordination, convulsions, lung cancer, bladder cancer
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation, sensitivity to sunlight, skin discoloration, skin disorders, thermal burns from heated material
LONG TERM EXPOSURE: skin disorders, sensitivity to sunlight, skin cancer, scrotal cancer
EYE CONTACT:
SHORT TERM EXPOSURE: irritation, sensitivity to sunlight, eye damage, thermal burns from heated material
LONG TERM EXPOSURE: irritation, sensitivity to sunlight, eye damage
INGESTION:
SHORT TERM EXPOSURE: irritation, nausea, vomiting, stomach pain
LONG TERM EXPOSURE: no information on significant adverse effects

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: For thermal burns, cool affected areas as quickly as possible by drenching or immersing in water. Wash skin with soap and water for at least 15 minutes, or use a waterless handcleaner, while removing contaminated clothing and shoes. Get immediate medical attention, if needed.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: DO NOT induce vomiting. If a large amount is swallowed, get medical attention. Do not give anything by mouth to unconscious or convulsive person. If vomiting occurs, keep head lower than hips to help prevent aspiration.

5. FIRE-FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: During fire conditions, vapors and decomposition products may be released, forming flammable/explosive mixtures in air. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, regular foam, water spray

FIRE FIGHTING: Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Use extinguishing agents appropriate for surrounding fire. Flood with fine water spray Directly spraying water or foam onto hot burning product may cause frothing. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Full fire fighting turn-out gear (bunker gear)

SENSITIVITY TO MECHANICAL IMPACT: No

SENSITIVITY TO STATIC DISCHARGE: Yes (dust)

FLASH POINT: >374 F (>190 C) (PMCC)
AUTOIGNITION: >750 F (>399 C)

6. ACCIDENTAL RELEASE MEASURES

WATER RELEASE:
Subject to California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:
Collect spilled material in appropriate container for disposal. Keep out of water supplies and sewers. Keep unnecessary people away, isolate hazard area and deny entry. In Canada, report releases to provincial authorities, municipal authorities, or both, as required. Due to the concentration of Benzo(a) pyrene and the CERCLA (40 CFR 302.4) reportable quantity of 1 pound, the release of 70 pounds of this product requires National Response Center notification.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Label all

containers. Keep container in a well-ventilated place. Keep away from heat, sparks and flame. Protect from physical damage. Keep separated from incompatible substances. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30).

HANDLING: Avoid breathing vapors of heated materials. Avoid contact with eyes, skin and clothing. When using, do not eat, drink or smoke. Wash exposed areas thoroughly with soap and water, or a waterless handcleaner, after skin contact and before eating, drinking, using tobacco products, or restrooms. Use protective skin cream on exposed skin before and during work shift. To reduce sun sensitivity a sun-blocking lotion (SPF 15+) can also be applied prior to application of a protective cream. Contaminated clothing should be removed and laundered before reuse.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMITS:
HIGH-TEMP. COAL TAR PITCH:
COAL TAR PITCH VOLATILES:
0.2 mg/m3 **OSHA** TWA (benzene soluble fraction)
0.2 mg/m3 ACGIH TWA (benzene soluble fraction)
0.1 mg/m3 **NIOSH** recommended TWA 10 hour(s) (cyclohexane extractable fraction)

PETROLEUM PITCH:
COAL TAR PITCH VOLATILES:
0.2 mg/m3 **OSHA** TWA (benzene soluble fraction)
0.2 mg/m3 ACGIH TWA (benzene soluble fraction)
0.1 mg/m3 **NIOSH** recommended TWA 10 hour(s) (cyclohexane extractable fraction)

VENTILATION: Ensure adequate ventilation. Ensure compliance with applicable exposure limits.

EYE PROTECTION: ANSI Z87.1-1989 approved safety glasses with side shields. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. At elevated temperatures: A faceshield is recommended.

CLOTHING: Wear protective clothing to prevent contact. Use protective skin cream on exposed skin before and during work shift. Contaminated clothing should be removed and laundered before reuse. When material is at an elevated temperature, wear appropriate heat resistant clothing.

GLOVES: Wear appropriate gloves. When material is at an elevated temperature, wear appropriate heat resistant gloves.

PROTECTIVE MATERIAL TYPES: protective skin creams, chemical resistant material, heat resistant material

RESPIRATOR: If the applicable TLVs and/or PELs are exceeded, use canister or cartridge respirators, which are MSHA/NIOSH-approved, with organic vapor cartridges.

PHYSICAL STATE: solid
COLOR: black
PHYSICAL FORM: changes from solid to liquid as temperature increases
ODOR: coal tar odor
BOILING POINT: >464 F (>240 C)
MELTING POINT: >70 F (>21 C)
VAPOR PRESSURE: 0 mmHg @ 20 C
VAPOR DENSITY (air=1): >1
SPECIFIC GRAVITY (water=1): 1.26-1.34 @ 15.5 C
WATER SOLUBILITY: almost insoluble
PH: Not applicable
VOLATILITY: Not applicable
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

INCOMPATIBILITIES: oxidizing materials

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: carbon monoxide, carbon dioxide, oxides of nitrogen, sulfur compounds, polynuclear aromatic hydrocarbons

POLYMERIZATION: Will not polymerize.

CARBON PITCH TYPE A:
CARCINOGEN STATUS: OSHA: No, NTP: Yes, IARC: Yes, (See below for additional information on component carcinogen status)
TARGET ORGANS: respiratory system, skin, eyes, bladder, scrotum
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders, skin disorders, eye disorders, central nervous system disorders (i.e. headache, drowiness, dizziness, loss of coordination)
ADDITIONAL DATA: This product contains coal tar pitch. Volume 35 of the IARC monograph states that there is sufficient evidence that coal tar pitches are carcinogenic in humans. IARC's conclusion is based upon studies suggesting an association between skin cancer and chronic occupational dermal exposure to coal tar pitches and upon other historical studies and anecdotal reports showing an association between dermal exposure to coal tar pitch and scrotal cancer in the absence of good hygiene practices.

Epidemiological studies of aluminum reduction workers showed an excess risk of developing bladder cancer for workers with chronic inhalation overexposure to coal tar pitch volatiles in excess of the recommended permissible exposure level. Studies also suggest an association between lung cancer and chronic inhalation overexposure to coal tar pitch volatiles in excess of the recommended permissible exposure level. A recent animal study may suggest an association between lung cancer and pulmonary deposition of particulate matter originating from coal tar pitches. It is not anticipated, however, that use of this product in liquid form will create a respirable dust.

In addition to containing information about the product as a whole, this data sheet also contains information about individual components of the product. Information of this nature may not have been derived from studies or data relating to this product and/or may have been derived from studies or data that did not involve human exposure and involved animal exposure only.

HIGH-TEMP. COAL TAR PITCH:
CARCINOGEN STATUS: NTP: Known Human Carcinogen; IARC: Human Sufficient Evidence, Animal Sufficient Evidence, Group 1; ACGIH: A1 -Confirmed Human Carcinogen (Coal tar pitch volatiles)
LOCAL EFFECTS:
Irritant: skin, eye
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders, skin disorders, central nervous system disorders

PETROLEUM PITCH:
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: respiratory disorders, skin disorders, eye disorders

POLYCYCLIC AROMATIC HYDROCARBONS:
ADDITIONAL DATA: Some polycyclic aromatic hydrocarbons (PAHs), found in coal tar complex substances, have been reported to cause lung and skin cancer in humans under conditions of poor personal hygiene, prolonged/repeated contact, and exposure to sunlight. The National Toxicology Program (NTP) and IARC have independently classified various PAH compounds present in coal tar substances as reasonably anticipated to be human carcinogens (NTP), probably carcinogenic to humans (IARC Group 2A), possibly carcinogenic to humans (IARC Group 2B), and not classifiable as to carcinogenicity to humans (IARC Group 3). The cancers reported in the studies upon which IARC based its conclusions involved lung, skin, liver, stomach, kidney and blood cancers in animals. Based on the results of animal experiments PAHs may cause injury to the liver, kidneys, lungs, blood and lymph systems. Some PAH's have also been associated with impaired fertility, heritable genetic damage and birth defects in mice.

Not available.

Dispose in accordance with all applicable regulations.

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Other regulated substances, solid, n.o.s. **RQ**
ID NUMBER: NA3077
HAZARD CLASS OR DIVISION: 9
PACKING GROUP: III
LABELING REQUIREMENTS: 9
DOT HAZARDOUS SUBSTANCE(S):
Benzo(a)pyrene 1 lb(s) (0.454 kg(s))
Fluoranthene 100 lb(s) (45.4 kg(s))
Indeno(1,2,3-cd)pyrene 100 lb(s) (45.4 kg(s))
1,2-Benzanthracene 10 lb(s) (4.54 kg(s))
1,2-Benzphenanthrene 100 lb(s) (45.4 kg(s))
Benzo(b)fluoranthene 1 lb(s) (0.454 kg(s))
OTHER INFORMATION: This material contains reportable quantity (RQ) Hazardous Substances. Applicable shipping classification depends on temperature of product. Product in Tank Car or Tank Truck is shipped as 'Elevated temperature liquid, n.o.s.' 'Other regulated substances, solid, n.o.s.' applies for all container sizes.

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Elevated temperature liquid, n.o.s. **RQ**
ID NUMBER: UN3257
HAZARD CLASS OR DIVISION: 9
PACKING GROUP: III
LABELING REQUIREMENTS: 9
DOT HAZARDOUS SUBSTANCE(S):
Benzo(a)pyrene 1 lb(s) (0.454 kg(s))
Fluoranthene 100 lb(s) (45.4 kg(s))
Indeno(1,2,3-cd)pyrene 100 lb(s) (45.4 kg(s))
1,2-Benzanthracene 10 lb(s) (4.54 kg(s))
1,2-Benzphenanthrene 100 lb(s) (45.4 kg(s))
Benzo(b)fluoranthene 1 lb(s) (0.454 kg(s))
OTHER INFORMATION: This material contains reportable quantity (RQ) Hazardous Substances. Applicable shipping classification depends on temperature of product. Product in Tank Car or Tank Truck is shipped as 'Elevated temperature liquid, n.o.s.' 'Other regulated substances, solid, n.o.s.' applies for all container sizes.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Elevated temperature liquid, n.o.s.
UN NUMBER: UN3257
CLASS: 9
PACKING GROUP/RISK GROUP: III
OTHER INFORMATION: Applicable shipping classification depends on temperature of product. No classification is assigned when material is not at an elevated temperature.

U.S. REGULATIONS:

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):
PYRENE: 1000/10000 **LBS TPQ**

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):
PYRENE: 5000 **LBS RQ**

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):
ACUTE: Yes
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
Benzo(a)pyrene
BENZO(G,H,I)PERYLENE
FLUORANTHENE
Indeno (1,2,3-cd)pyrene
1,2-Benzanthracene
1,2-Benzphenanthrene (Chrysene)
BENZO(B)FLUORANTHENE
Dibenzo(a,h)pyrene
BENZO(J)FLUORANTHENE
BENZO(K)FLUORANTHENE
Dibenzo(a,e)pyrene
Dibenzo(a,i)pyrene
Dibenz(a,h)anthracene

STATE REGULATIONS:

California Proposition 65:
Known to the state of California to cause the following:
Soots, tars, and mineral oils (untreated and mildly treated oils and used engine oils)
Cancer (Feb 27, 1987)
Benzo(a)pyrene
Cancer (Jul 01, 1987)
Indeno (1,2,3-cd)pyrene
Cancer (Jan 01, 1988)
1,2-Benzanthracene
Cancer (Jul 01, 1987)
1,2-Benzphenanthrene (Chrysene)
Cancer (Jan 01, 1990)
BENZO(B)FLUORANTHENE
Cancer (Jul 01, 1987)
Dibenzo(a,h)pyrene
Cancer (Jan 01, 1988)
BENZO(J)FLUORANTHENE
Cancer (Jul 01, 1987)

BENZO(K)FLUORANTHENE
Cancer (Jul 01, 1987)
Dibenzo(a,e)pyrene
Cancer (Jan 01, 1988)
Dibenzo(a,l)pyrene
Cancer (Jan 01, 1988)
Dibenz(a,h)anthracene
Cancer (Jan 01, 1988)
Carbazole
Cancer (May 01, 1996)

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: D2A.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): All components of this product are listed on either the DSL or the NDSL.

The information set forth in this Material Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recomuendations and disclaims all liability from reliance thereon.

This abstract is tmm tte Roundup® herbidde label current as of June 1, 1990 and only contains use instructions tor industrial use The product descriptions and recommendations provided In this abstrect are for background information only. Always refar to the comple label on the product container before using any Monsanto or other pesticide product.

Roundup®

Herbicide by Monsanto

Complete Directions for Use

EPA Reg. No. 524-308-AA

AVOID CONTACT WITH FOLIAGE, GREEN STEMS, OR FRUIT OF tROPS, DESIRABLE PLANTS AND TREES, SINCE SEVERE INJURY OR DESTRUCTION MAV RESULT

This product has been approved fw use in Califwnia except as stated otherwbe on page 122.

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Read the entire lsbel hefore using this product

Use only according to label Instructions.

Resd "UMIT OF WARRANTY AND LIABILITY" beline buying or using. If tenns are not nceptable, return at ence unopened.

REFORMUIATION IS PROHIBITED. SEE INDIVIDUAL CONTAINER LABEL FOR REPACKAGING LIMITATIONS.

LIMIT OF WARRANTY ANO LIABILITY

(Not applicaLle to consomer appScatipns applioi ly the homeowner for noncommersid purposes as pomiHed by lbe nipplemenbl labeling for one-quart ceAriners.)

this Company nammti that this product conformato the chemical dsscription on the label and is reasonably fit for the purposes set forth In the Complete Directions fbr Usa label booklet ("Directions") when psed In accordance with those Directions under the canditions desaibed therein. NO OTHER EXPRESS WARRANTY OR IMPLIED WARRANTY GP fiiNESS FDR PARHCULAR PURPOSE OR MERCHANTABILITY IS MADE. This wamnty is also subject to the conditions and limitations stated hasein.

Buyer and all users shall promptly notify tbis Company of any ciaims whether based in contract, negligenee, strict liability, other tort or otherwise.

Buyer and all tno4 are responsible for all loss or dsmege from use or haodling which results hera conditions beyond the conbol of this Company, including tiut not lbnited to, incompatibility with preducts other thait those set forth in the Directions, application ti er contact with desirable wgetation, unesuel weather, weather oondi·tions vihich are outside tie range coosidered normal at the application sibs and for the time period when the product is applied, as well as wostber conditions which are outside the application ranges sst forth in the Directions, application bi any manner not esplkitly set fiidh In the Directions, moisture conditions outside the moisture range specified bi the Directions, or the presence of pnnlucts other than tiose set forth in the Directions In or on the soil, crap or treated vegetaism.

THE EXCLUSIVE REMEDY OF THE USER OR BUYER, ANO THE LIMIT Of THE LIABILIiY OF THIS COMPANY OR ANY OTHER SELLER FOR ANY ANO All LOSSES, INJURIES OR DAMAGES RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT (INCLUDING CLAIMS BASED IN CONTRACT, NEGLIGENCE, STRICT LIABILITY, OTHER TORT OR OTHERWISE) SHALL BE THE PURCHASE PRICE PAID BY THE USER OR BUYER FOR THE QUANTITY OF THIS PRODUCT INVOLVED, OR, AT THE ELECTION OF THIS COMPANY OR ANY OTHER SELLER, THE REPLACEMENT OF SUCH QUAINTITY, OR, IF NOT ACQUIRED BY PURCHASE, REPLACEMEKT OF SUCH QUANTITY. IN NO EVENT SHALL THIS COMPANY OR ANY OTHER SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES.

Buyer and all users are deemed to have accepted the terms of this LIMIT OF WARRANTY AND LIABILITY which may not be varied by eny wdtai or written agreement

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

Keep out of reach of children.

WARNING!

CAUSES EYE IRRITATION.
HARMFUL IF SWALLOWED OR INHALED.
MAY CAUSE SKIN IRRITATION.

Do not get in eyes, on skin or on clothing.

Avoid breathing vapor or spray mist.

Wash thoroughly with soap and water after handling.

FIRST AID: IF IN EYES, immediately flush with plenty of water for at least 15 minutes Get medical attention.

IF ON SKIN, immediately fhrsh with plenty of water. Remose contaminated dothing. Wash clothing before reuse.

IF SIVALLOWED, this product will cause gastrointestinal bact irritation. Immediately dilute by swallowing water or milk. Get medical attention.

IF INHALED, remove individual to hesh air. Gat medical attention if bigathing difficulty detelops.

In case of an emergency involving this product Call Collect, day or aight, (314) 694-4000.

Environmental Hazards

Do not apply direcdy to water or wetland (swamps, bogs, marshes or poUholes). Do not contaminate water when disposing of equipment washwaters.

Physical or Chemical Hazards

Spray solutions of this product should be mixed, stored and applied only in stainless steel, aluminum, fiberglass, plastic and plastic-lined steel containers.

DO NOT MIX, STORE OR APPLY THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED STEEL OR UNLINED STEEL (EXCEPT STAINLESS STEEL) CONTAINERS OR SPRAY TANKS. This product or spray solutions of this product react with sncll containers and tanks to produce hydrogen gas which may form a highly combustable gas mixtuio. This gas mixture could flash or explode, causing serious personal injury, if ign open flame, spark, welder's torch, lighted ciga other ignition source.

ACTIVE INGREGIENT:
*Glyphosete, N-(plnsphanonmethyl) glycine, in the form of its Isopmpylamine salt .....
INERT INOREDIEnTS: .....

*Contains 480 grams per litre or 4 pounds per l lon of the active Ingredient, glyphosate, in One its isopropylamine salt Equivalent to 356 gn litre or 3 pounds per U.S. gallon of the acid, gly

DIRECTIONS FOR USE

It is a violation of Federal law to use this produ manner incoasistent with its labeling.

Storage and Disposal

Do not contaminate water, foodstuffs, seed or storage or disposal.

See container label for STORAGE AND DI instructions.

GENERAL INFORMATIOI

DO NDT APPLY THIS PRODUCT USING AERIAi EQUIPMENT EXCEPT UNDER CONDITIONS AS FIED WITHIN THIS LABEL

Roundup® herbidde, a water soluble liquii readily with water to be applied as a foliar spra control or destruction of most herbscaous plant be applied through most standard industrial or l sprayers after dilution and thomogh mixing wi in accordance with label instructions.

Thb product moves through tie plant hom ths hdiage contact to and into the root system. Visib on most annual weeds occur within 2 to 4 day most perennial weeds may not occur for 7 days Exbemely cool or cloudy weather following tr may slow down activity of this pmduct and del effects of control. Visible effects are a gradual wi yellowing of the plant which advances to c browning of abowgmund growth and deteriorati dergmund pbnt parts.

Unless otherwisa specified en this label, dela tion until vegetatbn has emerged and reached l described for cantral of such vegetation u "Weeds Controlled" section of this label. Ur plants arising from unattached undergraund or root steele of perennials will not be affect spray and wiS continue tb gron. Fbr thh reason, trd of most perennial weeds is ohtalned when l is made at late growth stages approaching m

Always use the higher rate of this product per a tie recommended range when (1) weed growt or dense, or (2) weeds are growing In an un (noncultivated) area.

Do not treat weeds under poor growing condit as drought sbress, disease or insect damage, a weed conbol may rasult. Reduced rendb may when treating weeds heavily covered with di

delayed greenup in highly maintained turfgrass areas; i.e., golf courses, lawns, etc. DO NOT APPLY TANK MIXTURES of Roundup plus Oust in highly maintained turfgrass areas.

RELEASE OF BERMUDAGRASS OR BAHIAGRASS

NOTE: Use only in areas where bermudagrass or bahiagrass are desirable ground covers and where some temporary injury or discoloration can be tolerated. Use Roundup plus Oust tank mixtures only on railroads, highways, utility plant sites, or other right-of-way areas.

When applied as directed for "Noncrop Uses" under the conditions described, this product will provide control or suppression of many winter annual weeds and tall fescue for effective release of dormant bermudagrass or bahiagrass. This product may be tank-mixed with Oust as recommended for residual control. Make applications to dormant bermudagrass or bahiagrass. Roundup plus Oust tank mixture may delay greenup. To avoid delays in greenup and minimize injury, do not add more than 1 ounce per acre of Oust to bermudagrass or more than ½ ounce per acre on bahiagrass, or treat when these grasses are in a semi-dormant condition.

For best results on winter annuals, treat when plants are in an early growth stage (below 8 inches in height) after most have germinated. For best results on tall fescue, treat when fescue is in or beyond the 4 to 6-leaf stage.

WEEDS CONTROLLED

Rate recommendations for control or suppression of winter annuals and tall fescue are listed below:

Apply the recommended rates of this product alone or as a tank mixture in 10 to 25 gallons of water, plus 0.5 to 1 percent nonionic surfactant by total spray volume per acre.

For the best recommendation for the mixture of weeds within your geographic areas, contact your Monsanto sales representative.

WEEDS CONTROLLED OR SUPPRESSED WITH ROUNDUP® ALONE*

NOTE: C = Control
S = Supression

	ROUNDUP® OZ/ACRE					
WEED SPECIES	S	12	16	24	32	64
Barley, little *Hordeum pusillum*	S	C	C	C	C	C
Bedstraw, catchweed *Galium aparine*	S	C	C	C	C	C
Bluegrass, annual *Poa annua*	S	C	C	C	C	C
Chervil *Chaerophyllum tainturieri*	S	C	C	C	C	C
Chickweed, common *Stellaria media*	S	C	C	C	C	C
Clover, crimson *Trifolium incarnatum*	•	S	S	C	C	C
Clover, large hop *Trifolium campestre*	•	S	S	C	C	C
Fescue, tall *Festuca arundinacea*	•	•	•	•	S	S
Geranium, Carolina *Geranium carolinianum*	•	•	S	S	C	C
Henbit *Lamium amplexicaule*	•	5	C	C	C	C
Ryegrass, Italian *Lolium multiflorum*	•	•	S	C	C	C
Speedwell, corn *Veronica arvensis*	S	C	C	C	C	C
Vetch, common *Vicia sativa*	•	•	S	C	C	C

*These rates apply only to sites where an established competitive turf is present.

WEEDS CONTROLLED OR SUPPRESSED WITH ROUNDUP® PLUS OUST*

NOTE: C = Control
S = Suppression

	ROUNDUP® + OUST (OZ/ACRE)							
WEED SPECIES	ROUNDUP + OUST	8 + ¼	12 + ⅛	12 + ¼	16 + ⅛	16 + ½	12 + 1	16 + 1
Barley, little *Hordeum pusillum*	C	C	C	C	C	C	C	C
Bedstraw, catchweed *Galium aparine*	C	C	C	C	C	C	C	C
Bluegrass, annual *Poa annua*	S	C	C	C	C	C	C	C
Chervil *Chaerophyllum tainturieri*	C	C	C	C	C	C	C	C
Chickweed, common *Stellaria media*	S	C	C	C	C	C	C	C
Clover, crimson *Trifolium incarnatum*	S	S	S	S	C	C	C	C
Clover, large hop *Trifolium campestre*	•	•	S	S	S	C	C	C
Fescue, tall *Festuca arundinacea*	•	•	•	•	•	S	S	S
Geranium, Carolina *Geranium carolinianum*	•	S	S	C	C	C	C	C
Henbit *Lamium amplexicaule*	•	S	C	C	C	C	C	C
Ryegrass, Italian *Lolium multiflorum*	•	S	S	C	C	C	C	C
Speedwell, corn *Veronica arvensis*	S	C	C	C	C	C	C	C
Vetch, common *Vicia sativa*	C	C	C	C	C	C	C	C

*These rates or mixtures of rates apply only to sites where an established competitive turf is present.

RELEASE OF ACTIVELY GROWING BERMUDAGRASS

When applied as directed, this product will aid in the release of bermudagrass by providing control of annual species listed in the "Weeds Controlled" section of this and the Oust label, and suppression or partial control of certain perennial weeds.

For control or suppression of those annual species listed on this label, use 1 to 3 pints of this product as a broadcast spray in 10 to 25 gallons of spray solution per acre. Use the lower rate when treating annual weeds below 6 inches in height (or length of runner in annual vines). Use higher rate as size of plants increases or as they approach flower or seedhead formation.

Use the higher rate of this product for partial control of the following perennial species. Use the lower rates for suppression of growth. For best results, see the "Weeds Controlled" section of this label for proper stage of growth.

Bahiagrass *Paspalum notatum*	Johnsongrass*** *Sorghum halepense*
Bluestem, silver *Andropogon saccharoides*	Trumpetcreeper* *Campsis radicans*
Fescue, tall *Festuca arundinacea*	Vaseygrass *Paspalum urvillei*

*Suppression at higher rates only.

**Control at the higher rates.

This product may be tank mixed with Oust. If tank-mixed, use no more than 1 to 2 pints per acre of Roundup herbicide with 1 to 2 ounces of Oust per acre.

Use the lower rates of both mixtures to control annual weeds below 6 inches in height (or runner length in annual vines) that are listed in the "Weeds Controlled" section of this booklet and the Oust label. Use the higher rates as annual weeds increase in size and approach the flower or seedhead stages.

Use the higher rates of this product to provide partial control of the following perennial weeds. Use the lower rates for suppression of growth.

Bahiagrass *Paspalum notatum*	Johnsongrass* *Sorghum halepense*
Bluestem, silver *Andropogon saccharoides*	Poorjoe** *Diodia teres*
Broomsedge *Andropogon virginicus*	Trumpetcreeper* *Campsis radicans*
Dock, curly *Rumex crispus*	Vaseygrass *Paspalum urvillei*
Dogfennel *Eupatorium capillifolium*	Vervain, blue *Verbena hastata*
Fescue, tall *Festuca arundinacea*	

*Suppression at higher rates only.

**Control at the higher rates.

Use only on well-established bermudagrass. Bermudagrass injury may result from the treatment but regrowth will occur under moist conditions. Repeat applications in the same season are not recommended, since severe injury may result.

Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

COOL SEASON TURF GROWTH REGULATION

When applied as directed, this product will suppress growth and seedhead development of listed turf species in industrial sites.

This product is recommended for management of coarse turfs on roadside rights-of-way or other industrial areas. Do not use on high-quality turfs or other areas where some turf color changes cannot be tolerated. Slight turf discoloration may occur but turf will regreen and regrow under moist conditions as effects of this product wear off.

Apply 4 to 6 fluid ounces of this product per acre alone or in a recommended tank mixture. Spray volumes of 10 to 40 gallons per acre are recommended.

When using this product, mix 2 quarts of a nonionic surfactant per 100 gallons of spray solution.

This product can be used for growth and seedhead suppression of:

Tall Fescue
Smooth Brome

For best results, apply this product in a recommended tank mixture to actively growing turfgrasses after greenup in the spring of the year. For suppression of seedheads, applications must be made before boot-to-seedhead stage of development. Applications made from seedhead emergence until maturity may result in turf discoloration or injury.

After mowing or removal of seedheads, this product in a recommended tank mixture may also be used to suppress the growth of certain turfgrasses. Allow turf to recover from stress caused by heat, drought, or mowing before making applications. Applications made to turf under stress may increase the potential for discoloration or injury.

ANNUAL GRASSES

For growth suppression of some annual grasses such as annual ryegrass, wild barley and wild oats, apply 3 to 4 ounces of this product in 10 to 40 gallons of spray solution per acre. Applications should be made when annual grasses are actively growing and before the seedheads are in the boot stage of development. Treatments made after seedhead emergence may cause injury to the desired grasses.

TANK MIXTURES

For the following tank mixtures, consult each product label for weeds controlled and the correct stage of application. Do not treat turf under stress.

Tank mixtures plus 2,4-D Amine

For additional weed control benefits, up to 1 quart per acre of 2,4-D amine may be added to the following tank mixtures. Consult the label for 2,4-D amine for weeds controlled.

TALL FESCUE

Roundup plus Telar™

For suppression of tall fescue growth and seedheads, and control or partial control of some annual weeds, apply this tank mixture after greenup and prior to boot-to-seedhead stage of development. Use up to ½ ounce of Telar per acre.

This tank mixture can also be applied after mowing or removal of tall fescue seedheads for turf growth suppression. Make only one of the above applications per growing season.

Roundup plus Oust™

For suppression of tall fescue growth and seedheads, and control or partial control of some annual weeds, apply this tank mixture after greenup and prior to boot-to-seedhead stage of development. Use up to 1/4 ounce of Oust per acre.

Roundup plus Escort™

This tank mixture can be applied after mowing or removal of tall fescue seedheads for turf growth suppression and control or partial control of some annual weeds. Use up to 1/3 ounce of Escort per acre.

SMOOTH BROME

Roundup plus Oust

For suppression of smooth brome growth and seedheads and control or partial control of some annual weeds, apply this tank mixture after greenup and prior to boot-to-seedhead stage of development. Use up to 1/4 ounce of Oust per acre.

™Escort and Telar are trademarks of E. I. du Pont de Nemours and Company.

BAHIAGRASS SEEDHEAD AND VEGETATIVE SUPPRESSION

When applied as directed in the indicated noncrop areas (roadsides, airports, golf course roughs and plant sites), this product will provide significant inhibition of seedhead emergence and will suppress vegetative growth for a period of approximately 45 days with single applications and approximately 120 days with sequential applications.

Apply this product 1 to 2 weeks after full greenup of bahiagrass or after the bahiagrass has been mowed to a uniform height of 3 to 4 inches. Applications must be made prior to seedhead emergence. Apply 5 fluid ounces per acre of this product plus 0.5 to 1 percent nonionic surfactant by total spray volume in 10 to 25 gallons of water per acre.

Sequential applications of this product plus 0.5 to 1 percent nonionic surfactant by total spray volume may be made at approximately 45 day intervals to extend the period of seedhead and vegetative growth suppression. For continued seedhead suppression, sequential applications must be made prior to seedhead emergence. Apply no more than 2 sequential applications per year. As a first sequential application, apply 4 fluid ounces of this product per acre plus nonionic surfactant. A second sequential application of 2 to 4 fluid ounces per acre plus nonionic surfactant may be made approximately 45 days after the last application.

A tank mixture of Roundup plus Oust may be applied only on roadsides for seedhead inhibition and vegetative suppression. Apply 6 fluid ounces per acre of this product plus 0.25 ounce per acre of Oust, plus 0.5 to 1 percent nonionic surfactant by total spray volume 1 to 2 weeks following an initial spring mowing. When using Roundup plus Oust for suppression of bahiagrass, make only one application per year.

CALIFORNIA

This product has been approved by the U.S. Environmental Protection Agency and in the state of California for the uses, crops and sites listed in this labeling exception of these items, this booklet contains material approved by California.

These use conditions, crops and sites may not be registered with this product in California until approval is granted.

- Cool season turf growth regulation.

EPA Reg. No. 524-308-AA 1-897.10-0

This product has been approved for use in C except as stated otherwise on page 122.

In case of an emergency involving this pro
Call Collect, day or night, (314) 694-4000

MONSANTO COMPANY
AGRICULTURAL PRODUCTS
ST. LOUIS, MISSOURI, 63167 U.S.A.

PRODUCT	RATE/ACRE
Simatine 90W	6 to 12½ lbs
Simazine 4L	4.8 to 10 qts
Surflan 76W	2½ to 5½ lbs
Surflan AS	2 to 4 qts

Refer to the individual product labels for specific weed-crop sites, rates, carrier volumes and precautionary statements.

Mix only the quantity of spray solution which can be used during the same day. Do not allow these tank mixtures to stand overnight as this may result in reduced weed control.

APPLY THESE TANK MIXTURES THROUGH CONVENTIONAL BROADCAST EQUIPMENT ONLY.

TM Princep and Callible are trademarks of Ciba-Geigy Corporation.
TM Karmex and TM Krovar are trademarks of E.I. du Pont de Nemours and Company.
TM Rimtar is a trademark of Rhone-Poulenc Inc.
TM Surflan is a trademark of Elanco Products Company.

ORNAMENTALS

THIS PRODUCT IS NOT RECOMMENDED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN ORNAMENTALS.

When applied as directed for the conditions described for "Noncrop Uses", this product controls undesirable vegetation listed on this label prior to planting ornamentals, in established ornamentals, and within and around greenhouses and shadehouses.

For specific rates of application and instructions for control of various annual and perennial weeds, see the "Weeds Controlled" section of this label.

Where repeat applications are necessary, do not exceed 10.6 quarts of this product per acre per year.

Site Preparation—Following preplant applications of this product, any ornamental species may be planted. Precautions should be taken to protect nontarget plants during site preparation applications.

Greenhouse/Shadehouse Use—This product may be used to control weeds listed on this label which are growing in greenhouses. Desirable vegetation must not be present during application and air circulation fans must be turned off.

Postdirected Spray—Use as a directed spray toward the base of established woody ornamentals species listed below.

Arborvitae *Thuja spp.*	Lilac *Syringa spp.*
Azalea *Rhododendron spp.*	Magnolia *Magnolia spp.*
Boxwood *Buxus spp.*	Maple *Acer spp.*
Crabapple *Malus spp.*	Oak *Quercus spp.*
Euonymus *Euonymus spp.*	Privet *Ligustrum spp.*
Fir *Abies spp.* *Pseudotsuga spp.*	Pine *Pinus spp.*
Hollies *Ilex spp.*	Spruce *Picea spp.*
	Yew *Taxus spp.*

SILVICULTURAL SITES, RIGHTS-OF-WAY and CHRISTMAS TREES

NOTE: NOT RECOMMENDED FOR USE AS AN OVER-THE-TOP BROADCAST SPRAY IN SILVICULTURAL NURSERIES, OR CHRISTMAS TREE PLANTATIONS.

When applied as directed for "Noncrop Uses" under conditions described, this product controls undesirable vegetation listed on this label. This product also suppresses or controls undesirable vegetation listed on this label when applied at recommended rates for release of established coniferous species listed on this label.

For specific rates of application and instructions for control of various brush, annual and perennial weeds, see the "Weeds Controlled" section of this label. For specific rates of application for release of listed coniferous species, see the "Conifer Release" part of this section of the label.

Where repeat applications are necessary, do not exceed 10.6 quarts of this product per acre per year.

Aerial Application—This product may be applied using aerial spray equipment for silvicultural site preparation, conifer release and rights-of-way treatments. See the "Application Equipment and Techniques" part of the "Mixing, Additives and Application Instructions" section of this label for information on how to properly spray this product by air.

DO NOT APPLY THIS PRODUCT BY AIR TO RIGHTS-OF-WAY SITES IN THE STATE OF CALIFORNIA.

In order to reduce the aerial application drift hazard to aquatic sites*, to nontarget sites, or any site containing desirable vegetation, always maintain appropriate buffer zones. A buffer zone of the following minimum distances should be maintained:

- Helicopters using a Microbil™ boom, a Thru-Valve™ boom (IVB-45), or equivalent drift control systems, should maintain at least a 50-foot buffer zone.
- When using other aerial equipment

1. Maintain at least a 75-foot buffer zone for applications using 2 quarts or less per acre of this product.
2. Maintain at least a 125-foot buffer zone for applications using more than 2 quarts per acre of this product.
3. Maintain at least a 400-foot buffer zone for applications on rights-of-way when applied from 75 feet or more above ground level.

These distances should be increased if conditions favoring drift exist.

*Aquatic sites include all lakes, ponds, and streams used for significant domestic purposes or angling.

TM Microbil is a trademark of Union Carbide Agricultural Products, Inc.

TM Thru-Valve is a trademark of Waldrum Specialties, Inc.

SITE PREPARATION

Following preplant applications of this product, any silvicultural species may be planted.

POSTDIRECTED SPRAY

In established silvicultural sites, use as a spray on the foliage of undesirable vegetation. Care must be exercised to avoid contact of spray, drift or mist with foliage or green bark of desirable species.

CONIFER RELEASE

For release, apply only where conifers have been established for more than one year. Vegetation should not be disturbed prior to treatment or until visual symptoms appear after treatment. Symptoms of treatment are slow to appear, especially in woody species treated in late fall. Injury may occur to conifers treated for release, especially where spray patterns overlap or the higher rates are applied or when applications are made during periods of active conifer growth. Do not use additional surfactant with conifer release applications.

Applications must be made after formation of final conifer resting buds in the fall or prior to initial bud swelling in spring. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Use the following rates for conifer release to control or partially control the weeds listed in the "Weeds Controlled" section of this label.

For release of the following conifer species:

Douglas fir *Pseudotsuga menziesii*	Pines* *Pinus spp.*
Fir *Abies spp.*	Spruce *Picea spp.*
Hemlock *Tsuga spp.*	

*Includes all species except eastern white pine, loblolly pine or slash pine.

Apply 1½ to 2 quarts of this product per acre except in Washington and Oregon, west of the crest of the Cascade Mountains. For spring treatments west of the crest of the Cascade Mountains, apply 1 quart of this product per acre before conifer bud swell for control of annual weeds. For fall treatments in Washington and Oregon, west of the crest of the Cascade Mountains, apply 1 to 1½ quarts of this product per acre before any major leaf drop of deciduous species.

For release of western hemlock, apply 1 quart of this product per acre.

For release of the following conifer species:

Loblolly pine *Pinus taeda*	Slash pine *Pinus elliottii*
Eastern white pine *Pinus strobus*	

Late Season Application—Apply 1½ to 2 quarts of this product in a minimum of 5 gallons of spray solution per acre during early autumn. Applications made prior to September 1 or when conditions are conducive to rapid growth of conifers will result in potential for increased injury in the form of tip and/or needle burn. Injury may decrease with later applications. Some autumn colors are acceptable at time of application. Apply prior to frost or leaf drop of undesirable plants. Applications made according to label directions will release loblolly pine, eastern white pine and slash pine by reducing competition from the following species:

Ash *Fraxinus spp.*	Persimmon *Diospyros spp.*

Cherry:
Black
Prunus serotina
Pin
Prunus pensylvanica
Elm
Ulmus spp.
Hawthorn
Crataegus spp.
Locust, black
Robina pseudoacacia
Maple, red
Acer rubrs
Oak:
Black
Quercus velutfna
Post
Quercus stellata
Santbarn Red
Quercus falcata
White
Quereut alba
Poplar, yellow
Liriodendron talipfera
Sassafras
Sassafras albidum
Sourwood
Oxydendrum arboreum
Sumac:
Poison
Rhus vernix
Smooth
Rhus glabra
Winged
fdivs capallina
Sweetgum
Liquidambar styraciflua

Apply only to those sites where woxxty brush and trees listed in this label constitute the majority of the undesirable species.

Roundup plus Oust Tank Mixtures for Conifer Release from Harbaeaons Weeds

To release loblolly pines from herbaceous weeds, tank mixtures of this product with Oust will provide control of annual weeds listed in the "Weeds Controlled" section of this and the Oust label, and partial control of the perennial weeds listed below.

Apply 16 to 24 fluid ounces of this product with 2 to 4 ounces of Oust in 10 to 30 gallons of spray solution per acre. Make application to actively growing weeds as a broadcast spray over the top of the young loblolly pines.

This product plus Oust tank mixtures may not be applied by air in California.

This tank mixture may be applied using aerial equipment. When applying by air, use the recommended rate in 5 to 15 gallons of spray solution per acre.

For control of annual weeds below 12 inches in height (or runner length on annual vines), use the low rates of both products. Use the higher rates of both products when annual weeds are in more advanced stages of growth and approaching flower or seed formation.

Use the higher rates of both products for partial control of the following perennial weeds. Use the lower rates for suppression of growth.

Bahiagrass
Paspalum notatum
Broomsedge
Andropogon virginicus
Dock, curly
Rumex crispus
Dogfennel
Eupatorium capillifolium
Fescue, tall
Festuca arundinacea
Johnsongrass**
Sorghum halepense
Poorjoe**
Diodia teres
Trumpetcreeper*
Campsis radicans
Vaseygrass
Paspalum urvillei
Vervain, blue
Verbena hastata

*Suppression at the higher rates only.

**Control at the higher rates.

Pine damage may occur or can be accentuated if treatment takes place when young trees are under stress from drought, flood water, insects or disease.

Read and observe the cautionary statements and all other information appearing on the label of all herbicides used.

NOTE TO USER

This product must not be used in areas where adverse impact on Federally designated endangered/threatened plant or aquatic species is likely.

Prior to making applications, the user of this product must determine that no such species are located in or immediately adjacent to the area to be treated.

CUT STUMP TREATMENTS

Woody vegetation may be controlled by treating freshly cut stumps of trees and resprouts with this product. Apply this product using suitable equipment to ensure coverage of the entire cambium. Cut vegetation close to the soil surface. Apply a 50 to 100 percent solution of this product to the freshly cut surface immediately after cutting. Delays in application may result in reduced performance. For best results, applications should be made during periods of active growth and full leaf expansion.

When used according to directions for cut stump application, this product will CONTROL, PARTIALLY CONTROL or SUPPRESS many types of woody brush and tree species, some of which are listed below:

Alder
Alnus spp.
Eucalyptus/Bluegum
Eucalyptus globulus
Madrone
Arbutus menziesii
Oak
Quercus spp.
Reed, giant
Arundo donax
Saltcedar
Tamarisk spp.
Sweetgum
Liquidambar styraciflua
Tan Oak
Lithocarpus densiflorus
Willow
Salix spp.

INJECTION AND FRILL APPLICATIONS

Woody vegetation may be controlled by injection or frill application of this product. Apply this product using suitable equipment which must penetrate into the living tissue. Apply the equivalent of 1 ml of this product per each 2 to 3 inches of trunk diameter. This is best achieved by applying 50 to 100 percent concentration of this material either to a continuous frill around the tree or as cuts evenly spaced around the tree below all branches. As tree diameter increases in size, better results are achieved by applying diluted material to a continuous frill or more closely spaced cuttings. Avoid application techniques that allow runoff to occur from frill or cut areas in species that exude sap freely after frilling or cutting. In species such as this, make hill or cut at an oblique angle so as to produce a cupping effect and use undiluted material. For best results, application should be made during periods of active growth and after full leaf expansion.

This treatment WILL CONTROL the following woody species:

Oak
Quercus spp.
Poplar
Popalus spp.
Sweetgum
Liquidambar styraciflua
Sycamore
Platanus occidentalis

This treatment WILL SUPPRESS the following species:

Black gum
Nyssa sylvatica
Dogwood
Cornus spp.
Hickory
Carya spp.
Maple, red
Acer rubrum

TURFGRASSES AND GRASSES FOR SEED PRODUCTION

PREPLANT AND RENOVATION

When applied as directed for "Noncrop Uses" under conditions described, this product controls existing vegetation prior to the planting or renovation of turfgrasses or grass seed production areas.

For specific rates of application and information on control of various annual and perennial weeds, grasses, brush and trees, see the "Weeds Controlled" section of this label.

For maximum control of existing vegetation, delay planting to determine if any regrowth from escaped ground plant parts occurs. Where repeat treatments are necessary, sufficient regrowth must be attained before application. For warm-season grasses, such as bermudagrass, summer or fall applications provide best control.

DO NOT DISTURB SOIL OR UNDERGROUND PLANT PARTS BEFORE TREATMENT. Tillage or renovation techniques such as vertical mowing, coring or slicing should be delayed for 7 days after application to allow adequate translocation into underground plant parts.

TURFGRASSES

Where existing vegetation is growing in an unmanaged situation, apply this product to actively growing weeds at the stages of growth given in the "Weeds Controlled" section of this label.

Where existing vegetation is growing under turf management, apply this product after at least one regular mowing to allow sufficient time for good interception of the spray.

Desirable turfgrasses may be planted following label procedures.

GRASSES FOR SEED PRODUCTION

Apply this product to actively growing weeds at the stage of growth given in the "Weeds Controlled" section of this label prior to planting or renovation of turf or to established areas grown for seed production.

DO NOT feed or graze treated areas within 8 days of application.

ANNUAL WEED CONTROL IN DORMANT BERMUDAGRASS AND BAHIAGRASS TURF

When applied as directed for "Noncrop Uses" under conditions described, this product will provide control or suppression of many winter annual weeds. Use for effective release of dormant bermudagrass or bahiagrass turf. Refer to the rate table for Roundup under the "Release of Bermudagrass and Bahiagrass" section of this label for recommended rates based on the species to be suppressed or controlled when turf is dormant and prior to spring green-up. Treatments or broadcast applications of this product in excess of 16 ounces per acre may result in

to 18 inches in length. These tank mixtures may be applied using aerial application equipment (except in California) in fallow and reduced tillage systems only.

For control, apply 2 quarts of this product plus 0.5 pound a.i. of Banvel in 10 to 20 gallons of water per acre. At these rates, apply using ground application equipment only.

Irrigated Agricultural Lands

Apply 1 to 2 quarts of this product plus 1 quart per acre of 2,4-D amine in 10 to 20 gallons of water per acre with ground equipment only for partial control (suppression) of field bindweed. Applications should be made following harvest or in fall fallow ground when the bindweed is actively growing and the majority of runners are 12 inches or more in length. The use of at least one irrigation will promote active bindweed growth.

Dogbane, hemp
Apocynum cannabinum

For suppression, apply 16 ounces of this product plus 16 ounces of 2,4-D amine plus 0.5 to 1 percent nonionic surfactant by total spray volume in 5 to 10 gallons of water per acre for ground applications and 3 to 6 gallons of water per acre for aerial applications. Delay applications until maximum emergence of dogbane has occurred. For control, apply 4 quarts of this product in 3 to 20 gallons of water using ground application equipment only.

Smartweed, Swamp
Polygonum coccineum

For control, apply 16 ounces of this product plus 0.5 pounds active ingredient of 2,4-D amine plus 0.5 to 1 percent nonionic surfactant by total volume in 3 to 10 gallons of water per acre in the late summer or fall. Apply when plants are actively growing and most have reached the early bud stage of growth. Allow 7 or more day after application before tillage.

Refer to the specific product labels for crop rotation restrictions and cautionary statements of all products in tank mixture.

WOODY BRUSH AND TREES

When applied as recommended under the conditions described, this product CONTROLS or PARTIALLY CONTROLS the following woody brush, plants and trees:

Alder
Alnus spp.

Ash*
Fraxinus spp.

Aspen, quaking
Populus tremuloides

Beamat (Beanshiver)
Chamaebatia foliolosa

Birch
Betula spp.

Blackberry
Rubus spp.

Broom:
French
Cytisus monspessulanus

Scotch
Cytisus scoparius

Buckwheat, California*
Eriogonum fasciculatum

Cascara*
Rhamnus purshiana

Monkey Flower*
Mimulus guttatus

Oak:
Black*
Quercus velutina

Northern Pin
Quercus palustris

Post
Quercus stellata

Red
Quercus rubra

Southern Red
Quercus falcata

White*
Quercus alba

Persimmon*
Diospyros spp.

Poison Ivy
Rhus radicans

Poison Oak
Rhus toxicodendron

Ceanothus*
Ceanothus spp.

Chamise
Adenostoma fasciculatum

Cherry:
Bitter
Prunus emarginata

Black
Prunus serotina

Pin
Prunus pensylvanica

Coyote brush
Baccharis consanguinea

Creeper, Virginia*
Parthenocissus quinquefolia

Dewberry
Rubus trivialis

Elderberry
Sambucus spp.

Elm*
Ulmus spp.

Eucalyptus, Blaegum
Eucalyptus globulus

Hackberry*
Haplopappus squamosus

Hawthorn
Crataegus spp.

Hazel
Corylus spp.

Honeysuckle
Lonicera spp.

Kudzu
Pueraria lobata

Locust, black*
Robinia pseudoacacia

Madrone
Arbutus menziesii

Manzanita
Arctostaphylos spp.

Maple:
Red**
Acer rubrum

Sugar
Acer saccharum

Vine*
Acer circinatum

Poplar*, yellow
Liriodendron tulipifera

Raspberry
Rubus spp.

Rose, multiflora
Rosa multiflora

Russian-olive***
Elaeagnus angustifolia

Sage, black
Salvia mellifera

Sagebrush, California
Artemisia californica

Salmonberry
Rubus spectabilis

Sassafras
Sassafras albidum

Sourwood
Oxydendrum arboreum

Sumac:
Poison*
Rhus vernix

Smooth*
Rhus glabra

Staghorn*
Rhus typhina

Sweetgum
Liquidambar styraciflua

Swordfern*
Polystichum munitum

Tallowtree, Chinese
Sapium sebiferum

Tan Oak
Lithocarpus densiflorus

Thimbleberry
Rubus parviflorus

Tobacco, wild*
Nicotiana glauca

Trumpetcreeper
Campsis radicans

Willow
Salix spp.

*Partial control

**See below for control or partial control instructions.

***This product is not registered in California for use on Russian-olive.

NOTE: If brush has been mowed or tilled or trees have been cut, do not treat until regrowth has reached the recommended stages of growth.

Apply this product when plants are actively growing and, unless otherwise directed, after full leaf expansion. Use the higher rate for larger plants and/or dense areas of growth. On vines, use the higher rate for plants that have reached the woody stage of growth. Best results are obtained when application is made in late summer or fall after fruit formation.

In arid areas, best results are obtained when application is made in the spring to early summer when brush species are at high moisture content and are flowering.

Ensure thorough coverage when using hand-held equipment. Symptoms may not appear prior to frost or senescence with fall treatments.

Allow 7 or more days after application before tillage, mowing or removal. Repeat treatments may be necessary to control plants regenerating from underground parts or seed. Some autumn colors on undesirable deciduous species are acceptable provided no major leaf drop has occurred. Reduced performance may result if fall treatments are made following a frost.

See "Directions for Use", and "Mixing, Additives, and Application Instructions" sections of this label for labeled uses and specific application instructions.

Apply this product as follows to control or partially control the following woody brush and trees.

Alder/Dewberry/Honeysuckle/Post Oak/Raspberry—For control, apply 3 to 4 quarts per acre of this product as a broadcast spray or as a 1 to 1½ percent solution with hand-held equipment.

Aspen, quaking/Cherry: bitter, black, pin/Hawthorn/Oak, semihardwood/Sweetgum/Trumpetcreeper— For control, apply 2 to 3 quarts of this product per acre as a broadcast spray or as a 1 to 1½ percent solution with hand held equipment.

Birch/Elderberry/Hazel/Salmonberry/ Thimbleberry—For control, apply 2 quarts per acre of this product as a broadcast spray or as a 1 percent solution with hand held equipment.

Blackberry—For control apply 3 to 4 quarts per acre of this product as a broadcast spray, or 1 to 1½ percent solution with hand-held equipment. Make application after plants have reached full leaf maturity. Best results are obtained when applications are made in late summer or fall. After berries have set or dropped in late fall, blackberry can be controlled by applying a 3/4 percent solution of this product plus 0.5 to 1 percent nonionic surfactant by total spray volume with hand-held equipment. For control of blackberries after leaf drop and until killing frost or as long as stems are green, apply 3 to 4 quarts of this product in 10 to 40 gallons of water per acre.

Broom: French, Scotch—For control, apply a 1½ to 2 percent solution with hand-held equipment.

Buckwheat, California/Hazardia/Monkey Flower/Tobacco, wild—For partial control of these species, apply a 1 to 2 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.

Catclaw—For partial control, apply as a 1 to 1½ percent solution with hand-held equipment.

Coyote Brush—For control, apply a 1¼ to 2 percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

Eucalyptus/Bluegum—For control of eucalyptus resprouts, apply a 2 percent solution of this product with hand-held equipment when resprouts are 6 to 12 feet tall. Ensure complete coverage. Apply when plants are growing actively. Avoid application to drought-stressed plants.

Kudzu—For control, apply 4 quarts of this product per acre as a broadcast spray or as a 2 percent solution with hand-held equipment. Repeat applications will be required to maintain control.

Madrona resprouts—For suppression or partial control, apply a 2 percent solution of this product to resprouts less than 3 to 6 feet tall. Best results are obtained with spring/early summer treatments.

Maple, red**—For control, apply as a 1 to 1½ percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed. For partial control, apply 2 to 4 quarts of this product per acre as a broadcast spray.

Maple, sugar/Oak, northern pin/Oak red—For control, apply as a 1 to 1½ percent solution with hand-held equipment when at least 50 percent of the new leaves are fully developed.

Poison Ivy/Poison Oak—For control, apply 4 to 5 quarts of this product per acre as a broadcast spray or as a 2 percent solution with hand-held equipment. Repeat applications may be required to maintain control. Fall treatments must be applied before leaves lose green color.

Rose, multiflora—For control, apply 2 quarts of this product per acre as a broadcast spray or as a 1 percent solution with hand-held equipment. Treatments should be made prior to leaf deterioration by leaf-feeding insects.

Sage, black/Sagebrush, California/Chamise/Tarweed, Chinese—For control of these species, apply a 1 percent solution of this product as a foliar spray with hand-held equipment. Thorough coverage of foliage is necessary for best results.

Tan oak resprouts—For suppression or partial control apply a 2 percent solution of this product to resprouts less than 5 to 6 feet tall. Best results are obtained with fall applications.

Willow—For control, apply 3 quarts of this product per acre as a broadcast spray or as a 1 percent solution with hand-held equipment.

Other Woody Brush and Trees listed on this label—For partial control, apply 2 to 4 quarts of this product per acre as a broadcast spray or as a 1 to 2 percent solution with hand-held equipment.

NONCROP USES

See "General Information" and "Mixing Additives and Application Instructions" sections of this label for essential product performance information and the following "Noncrop" sections for specific recommended uses.

EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT OF SPRAY WITH FOLIAGE OF DESIRABLE TURFGRASSES, TREES, SHRUBS, OR OTHER DESIRABLE VEGETATION SINCE SEVERE DAMAGE OR DESTRUCTION MAY RESULT.

NOTE: If spraying areas adjacent to desirable plants, use a shield made of cardboard, sheet metal or plyboard while spraying to help prevent spray from contacting foliage of desirable plants.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seeds.

This product does not provide residual weed control. For subsequent weed control, follow a label-approved herbicide program.

Read and carefully observe the cautionary statements and all other information appearing on the labels of all herbicides used.

INDUSTRIAL, RECREATIONAL AND PUBLIC AREAS

When applied as directed for "Noncrop Uses", under conditions described, this product controls annual and perennial weeds listed on this label growing in areas such as airports, ditch banks, dry ditches, dry canals, fencerows, golf courses, highways, industrial plant sites, lumber yards, parking areas, parks, pebble/m tank farms and pumping installations, pipelines, power and telephone rights-of-way, railroads, roadsides, schools, storage areas, other public areas and similar industrial or noncrop areas.

For specific rates of application and instructions for control of various annual and perennial weeds and woody brush and trees, see the "Weeds Controlled" section of this label.

This product may be applied with recirculating sprayers, shielded applicators, or wiper applicators in any noncrop site specified on this label. See the "Selective Equipment" part of "Application Equipment and Techniques" section of this label for information on proper use and calibration of this equipment.

TANK MIXTURES FOR INDUSTRIAL SITES AND FORESTRY SITE PREPARATIONS

■ ROUNDUP® plus OUST™ ■

Use on industrial sites including airports, industrial plants, lumberyards, petroleum tank farms, pumping stations, pipelines, railroads, roadsides, storage areas or other similar sites where bare ground is desired.

This tank mixture may also be used as a site preparation treatment for sites to be planted to jack pine, loblolly pine, red pine, slash pine and Virginia pine.

When applied as directed for "Noncrop Uses" under the conditions described, this product plus Oust provides control of annual weeds listed in the "Weeds Controlled" section of the label for this product and Oust, and control or partial control of the perennial weeds listed below.

Apply 1 to 2 quarts of this product with 2 to 4 ounces of Oust in 10 to 40 gallons of spray solution per acre as a broadcast spray to actively growing weeds.

This mixture may be applied by aerial equipment in site prep operations. When applied by air, use the recommended rates in 5 to 15 gallons of spray solution per acre.

This product plus Oust tank mixtures may not be applied by air in California.

For control of annual weeds, use the lower rates of these products.

For control of the listed perennial weeds, use the higher rates of both products. For partial control, use the lower rates.

Bahiagrass
Paspalum notatum

Bermudagrass*
Cynodon dactylon

Bermudagrass
Andropogon virginicus

Dock, curly
Rumex crispus

Johnsongrass**
Sorghum halepense

Poorjoe**
Diodia teres

Quackgrass
Agropyron repens

Trumpetcreeper*
Campsis radicans

Vaseygrass
Paspalum urvillei

Dogfennel
Eupatorium capillifolium

Vervain, blue
Verbena b.

Fescue, tall
Festuca arundinacea

*Suppression at the higher rates only.

**Control at the lower rates.

Read and carefully observe the cautionary and all other information appearing on the herbicides used.

™Oust is a trademark of E. I. du Pont de Nemours

TANK MIXTURES NONCROP SITES

When applied as a tank mixture, this product controls of the emerged annual weeds and part of the emerged perennial weeds listed in this applied as a tank mixture, the following herbicides will provide preemergence control of listed in the individual product labels

- RODEOUP plus DIURON
- ROUNDUP® plus KROVAR™ I
- ROUNDUP plus KROVAR II
- ROUNDUP plus RONSTAR™ SOWP
- ROUNDUP plus SIMAZINE, PRINCEP™ CALIBER™ 90
- ROUNDUP plus SIMAZINE 4L
- ROUNDUP plus SIMAZINE 80W
- ROUNDUP plus SURFLAN™ 75W
- RODEOUP plus SURFLAN AS

When tank mixing with residual herbicide agriculturally approved nonionic surfactant percent by volume of spray solution. See the "Additives and Application Instructions" section before preparing these tank mixtures.

Read and carefully observe the label claims statements, recommended use rates and all precautions on the labels of all products used in mixtures. Use according to the most restrictive directions for each product in the mixture.

CONTROL OF EMERGED WEEDS

Annual Weeds—Apply 1 quart per acre of Krovar I in these tank mixtures when weeds are less than 3 inches tall and 1½ quarts per acre when weeds are 3 inches tall.

Perennial Weeds—For partial control of perennial weeds using these tank mixtures, apply 2 to 5 quarts of this product. Follow the recommendations in the "Weeds Controlled" section of this label for growth and rate of application for specific weeds.

PREEMERGENCE WEED CONTROL

The following are the labeled rates for the listed residual herbicides for noncrop uses:

PRODUCT	RATE
Diuron, Karmex™ DF	2 to 8 lb
Krovar I	4 to 6 lb
Krovar II	2 to 5 lb
Ronstar 50WP	4 to 8 lb
Simazine, Princep Caliber 90	5.3 to

Use 1 quart of this product per acre if weeds are less than 6 inches tall. If weeds are over 5 inches tall, use 1.5 quarts of this product per acre. If weeds have been mowed, grazed, or cut allow adequate time for new growth to recommended stages prior to treatment. These rates will also provide control of weeds listed in the "Low-Volume Broadcast Application" section.

WEED SPECIES

Balsamapple* *Momordica charantia*	Panicum *Panicum spp.*
Bassia, fivehook *Bassia hyssopifolia*	Ragweed, common *Ambrosia artemisiifolia*
Brome *Bromus spp.*	Ragweed, giant *Ambrosia trifida*
Fiddleneck *Amsinckia spp.*	Smartweed, Pennsylvania *Polygonum pensylvanicum*
Flaxleaf fleabane *Conyza canadensis*	Sowthistle, annual *Sonchus oleraceus*
Fleabane *Erigeron spp.*	Sunflower *Helianthus annuus*
Kochia *Kochia scoparia*	Thistle, Russian *Salsola kali*
Lettuce, prickly *Lactuca serriola*	Velvetleaf *Abutilon theophrasti*

*Apply with hand-held equipment only.

PERENNIAL WEEDS

Apply this product as follows to control or destroy most perennial weeds:

NOTE: If weeds have been mowed or tilled, do not treat until plants have resumed active growth and are at the recommended stages.

Repeat treatments may be necessary to control weeds regenerating from underground parts or seed. Repeat treatments must be made prior to crop emergence.

The addition of 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water may increase the performance of this product on perennial weeds. The improvement in performance may be apparent where environmental stress is a concern. Refer to the "Mixing, Additives and Application Instructions" section of this label.

When applied as recommended under the conditions described, this product WILL CONTROL the following PERENNIAL WEEDS:

Alfalfa *Medicago sativa*	Horseradish *Armoracia rusticana*
Alligatorweed* *Alternanthera philoxeroides*	Johnsongrass *Sorghum halepense*
Artichoke, Jerusalem *Helianthus tuberosus*	Kikuyugrass *Pennisetum clandestinum*
Bahiagrass *Paspalum notatum*	Knapweed *Centaurea repens*
Bentgrass *Agrostis spp.*	Lantana *Lantana camara*
Bermudagrass *Cynodon dactylon*	Milkweed *Asclepias spp.*
Bindweed, field *Convolvulus arvensis*	Mohly, wirestem *Muhlenbergia frondosa*
Bluegrass, Kentucky *Poa spp.*	Mullein, common *Verbascum thapsus*
Blueweed, Texas *Helianthus ciliaris*	Napiergrass *Pennisetum purpureum*
Bracken fern *Pteridium aquilinum*	Nightshade, silverleaf *Solanum elaeagnifolium*
Bromegrass, smooth *Bromus inermis*	Nutsedge, purple, yellow *Cyperus rotundus* *Cyperus esculentus*
Buffalograss *Buchloe dactyloides*	Orchardgrass *Dactylis glomerata*
Canarygrass, reed *Phalaris arundinacea*	Pampas *Cortaderia jubata*
Cattail *Typha spp.*	Paragrass *Brachiaria mutica*
Clover, red *Trifolium pratense*	Phragmites* *Phragmites spp.*
Clover, white *Trifolium repens*	Quackgrass *Agropyron repens*
Cogongrass *Imperata cylindrica*	Reed, giant *Arundo donax*
Dallisgrass *Paspalum dilatatum*	Ryegrass, perennial *Lolium perenne*
Dandelion *Taraxacum officinale*	Smartweed, swamp *Polygonum coccineum*
Dock, curly *Rumex crispus*	Sweet potato, wild* *Ipomoea pandurata*
Dogbane, hemp *Apocynum cannabinum*	Thistle, Canada *Cirsium arvense*
Fescues *Festuca spp.*	Timothy *Phleum pratense*
Fescue, tall *Festuca arundinacea*	Torpedograss* *Panicum repens*
Guineagrass *Panicum maximum*	Vaseygrass *Paspalum urvillei*
Horsenettle *Solanum carolinense*	Wheatgrass, western *Agropyron smithii*

*Partial Control

See "Directions for Use" and "Mixing, Additives and Application Instructions" sections of this label for labeled uses and specific application instructions.

Alfalfa—Apply 1 quart of this product per acre plus 0.5 to 1 percent nonionic surfactant by total spray volume in 3 to 10 gallons of water per acre. Make application after the last hay cutting in the fall. Allow alfalfa to regrow to a height of 6 to 8 inches or more prior to treatment. Applications should be followed with deep tillage at least 7 days after treatment, but before soil freeze-up.

Alligatorweed—Apply 4 quarts of this product per acre or apply a 1½ percent solution with hand-held equipment to provide partial control. Apply when most of the plants are in bloom. Repeat applications will be required to maintain such control.

Bermudagrass—For suppression in grass seed production areas. For ground applications only, apply 1.5 quarts of this product plus 0.5 to 1 percent nonionic surfactant by total spray volume in 10 to 20 gallons of water per acre. Ensure entire crown area has resumed growth prior to a fall application. Bermudgrass should be actively growing and have at least 5 inches of growth. Tillage prior to treatment should be avoided. Tillage 7 to 10 days after application is recommended for best results. Failure to use tillage after treatment may result in unacceptable control.

Bermudagrass—For control, apply 5 quarts of this product per acre and, for partial control apply 3 quarts per acre. Treat when bermudagrass is actively growing and seedheads are present. Retreatment may be necessary to maintain control. Allow 7 or more days after application before tillage.

Blackweed, Field/Bluewead, Texas—Apply 4 to 5 quarts of this product per acre west of the Mississippi River and 3 to 4 quarts per acre east of the Mississippi River. Apply when weed is actively growing and is at or beyond full bloom. Do not treat when weed is under drought stress as good soil moisture is necessary for active growth. New leaf development indicates active growth. For best results, apply in late summer or fall. Fall treatments must be applied before a killing frost. Allow 7 or more days after application before tillage.

Bindweed, field (suppression Irrigated lands where annual tillage is performed)—Apply 1 quart of this product plus 0.5 to 1 percent nonionic surfactant by total spray volume in 3 to 10 gallons of water per acre. Apply to actively growing bindweed that has reached a length of 12 inches or greater. Allow maximum weed emergence and runner growth. Do not treat when weed is under drought stress as good soil moisture is necessary for active growth. Allow 3 or more days after application before tillage.

Bluegrass, Kentucky / Bromegrass, smooth / Orchardgrass—Apply 2 quarts of this product in 10 to 40 gallons of water per acre when the grasses are actively growing and most plants have reached boot-to-early seedhead stage of development. For partial control in pasture or hay crop renovation, apply 1 to 1½ quarts of this product plus 0.5 to 1 percent nonionic surfactant by total spray volume in 3 to 10 gallons of water per acre. Apply to actively growing plants when most have reached 4 to 12 inches in height. Allow 7 or more days after application before tillage.

Orchardgrass (sods going to no-till corn)—Apply 1 to 1.5 quarts of this product per acre plus 0.5 to 1 percent nonionic surfactant by total spray volume in 3 to 10 gallons of water per acre. Apply to orchardgrass that is a minimum of 12 inches tall for spring applications and 6 inches tall for fall applications. Allow at least three days following application before planting. A sequential application of 3.75 to 4.5 quarts of Lariat* herbicide, or equivalent, will be necessary for optimum results. Lariat should be applied within 3 to 10 days following spring applications to prevent annual weed growth.

Lariat is not registered for use in California.

*Lariat is a registered trademark of Monsanto Company.

Bracken fern—Apply 3 to 4 quarts of this product per acre as a broadcast spray or as a 1 to 1½ percent solution with hand-held equipment. Apply to fully expanded fronds which are at least 18 inches long.

Bromegrass, weeping—For control, apply 2 quarts of this product plus 1 pint of Banvel per acre. For partial control, apply 1 quart of this product plus 1 pint of Banvel per acre. Add 0.5 to 1 percent nonionic surfactant by total spray volume and apply 3 to 20 gallons of water per acre. Apply when plants are producing new active growth which has been initiated by moisture for at least 2 weeks and when plants are at or beyond flowering.

Canarygrass, reed/Timothy / Wheatgrass, western—Apply 2 to 3 quarts of this product per acre. For best results, apply to actively growing plants when most have reached the boot-to-head stage of growth. Allow 7 or more days after application before tillage.

Cogongrass—Apply 3 to 5 quarts of this product plus 0.5 to 1 percent nonionic surfactant in 10 to 40 gallons of

water per acre. Apply when Cogongrass is at least 18 inches tall and actively growing in late summer or fall. Allow 7 ar mare days after application before tillage or mowing. Due to uneven stages of growth and the dense natore of vegetation preventing good spray coverage, repeat treabnents may be necessary to maintain oantiot.

Dogbana, hamp/Knapwced/Wiseradish—Apply 4 quarts of tiis product per acre. Apptr when actively growlog and when most weetohave reached the late bud to flower stage nf growth. Following crop harvest or mowing, allow weeds to regrow to a mature stage prior to beabnent. For best resuhs, apply in late summer or fall. Allow 7 or more days aftar application befons tillage.

Fescue, taD—Apply 3 quarts of this product hi 10 to 40 galkins oi water per acre to actively growing plonts when most have roached boot-to-early seedhead stage oi development.

Fall applications only—Apply 1 quart of this product plus 0.5 to 1 percent nonionic surfortant by total spray volume In 3 to 10 galkins of water per acre. Apply ta fescue in the fell when actively gmwing and plants have 6 to 12 inches of new growth. Allow 7 or mom days after application before tillage. A sequential applkation of 1 pint per acre of this prtiduct plus nonionic surfactam will improve long term contol and control seedlings genninating after fall beabnents or tie following spring.

Guineagrass—Apply 3 quarts of this product per acre or use a 1 percent solution with hand-held equipment. Apply to actively growing guineagrass when most has reached at least tie 74eaf stage ot growth. Ensure thorough coverage when using hand-held equipment. Allow 7 or mom days after application before tilluge.

Johnsongrass/Ilyegiase, perconial—Apply 1 to 3 quarts of this product per acre. In annual cmpping systems apply I to 2 quarts of this product per acre. Apply 1 quart of this product plus O.S to 1 percent uonionic ssifactant by total spray volume in 3 to 10 gallons of water per acre. tloe 2 quarts of this product when spplying 10 to 40 gallons of water per acre. In noncrop or areas where annual tillage (no-till), is not pethsmed, apply 2 to 3 quarts of this product in ID to 40 gallons of watss per acre. For best results, apply to actively growing plonts when most have reached the boot-to-head stage of growth or lu the fall prior to frost. Allow 7 or more days after application before tillage. Oo not tank-mix with residual herbicides when using the I quart per acre rata.

For burndown of Johnsongass, apply 1 plot per acre phis 0.5 to 1 percent nonionic surfactant fo 3 to 10 gallons of water per acre behne the plants reach a height of 12 inches. For tiis use, allow at least 3 days after beabnent tafoje tillage.

Spot Treatment Qiartial control or suppression)—Apply a 1 ptrcent solution of this pmduct phis O 5 to 1 penxent nonionic surfactant by total spray volume when johnsongrass lt 12 to 18 inches in height. Goverage should be unifonn and complete.

Kikuyugiass—Apply 2 to 3 quarts of this product pes acre. Spray when most kikuyugiass is at least 8 inches in height (3 or 4-leal stage ol growth) and acthely growing. Allow 3 or more days after appliestion before tillago.

Lantana—Apply this product as a 1 to 1¼ percent solution using hand-held equipment only. Apply to actively growing iantana at or beyond the bloom stage of growth. tlse the higher application rata for plants that hawn reached the woody stage of growth. Allow 7 or mom days after application before tillaga.

Milkweed, commori—Apply 3 quarts of this product per acre. Apply whan actively growing and most of the milkweed has reached the bta bud to llower stage ot growth. Fottowing small grain hawest or mowing, allow milkweed to regmw to a mature stage prior to trtatment. Allow 7 or more days after application before tillaga.

Melly, wireslem—Apply 1 to 2 quarts of this product per acre. Use 1 quart of this product plus O.S to 1 peresnt nonionic surfactant by total spray volume in 3 ta 10 gallons of water per acre. tlse 2 quarts of this product when applying 10 to 40 gadons of water per acre or in pasture, sod, or noncrop areas. Spray when tha wirestem muhly is 8 inches or mere in height and actively growing. Do not till between harvest and tall applioatioos or in tiie fall or spring prior to spring appiloationa. Allow 3 or more days after application before tillage. This produtt will not provide residual control of wirestem muhly hom seeds which germinate alter application of tiis product. Do not tank mot with tea'dual herbicides when using tie 1 quart per acre rate.

IGhtshade, silveleaf—For control apply 2 quarts ol this product plus 0.5 to I pertent nonionic surfoctant by total tpray vofome in 3 fo 10 gallons of water per acre Applications should be made when at least 60 percent of the plants have berries. Fall beabnents must be applied before a killing frost. Alhw 7 or more days after application before tillage. Do not treat when weed is under drought stress as good sou moisture is necessary for active growth.

Nuisedge putple, yellow—Apply 3 quarts of tiis product pes acre as a broadcast spray, or apply a 1 percent solution hom hand-held equipment to control existing nutsedge plants and immahire nutlets attached to treated plants. Tteat when plants are in flower or when new nutlets can be found at rolzome tips. Nutlets which have not germinated will not be controlled and may germinate following beabnent. Repeat beatments will ba required for long-tiin contml Wait 7 days alter treatment before tillage. Tillage will stimulate nutiet germination.

Apply 1 pint to 1 quart of this product per acre, plus 0.5 to 1 percent nonionic surfactant in 3 to 40 galkins of water per acre to provide suppresskin or partial control of existing nutsedge plants. Treat when plants have 3 to 5 loaves (less than 6 inches). Repeat treatmanlo will he required to control subsequent emerging plants. Wait 7 days after beabnent before tillage or mowing.

Pampas—Apply tiis product as a i ½ to 2 percent salutiin using hand-held equipment. Apply to plants tiat are actively gmwing at or beyond tie boot stage of growth. Thorough coverage is neeestary for best control.

Phragmites—For partial oontrol of phragmites in Florida and tie counties of other states bordering the Gulf of Mexico, apply 5 quarts per acre as a broadcast spray or apply a 2 percent solution fmm hand held equipment. In other areas of the U.S., apply 3 quarts per acre as a broadcast spray or apply a 1 percent solution from hand-held equipment for partial contol. For best results, treat during late summer or lall months or when plants ere actively growing and fo full bloom. Treabnent before or after tiis stage may lead to reduced control. Due to the dense natare of tie vegetation, which may prevent good spray coverage or uneven stages of growth, repeat treatmenta may be nccaeciry to mainlairt contol. Visual control symptoms will be sfow to develop.

Qoackgrass—In Annual Cropping Sjsicms, or in Pastoras and Sods Fothmed by Deep Tillage: Apply 1 to 2 quarts ot this product per acre. For the one quart rate, apply 0.5 to 1 percent nonionic surfactant by total spray volume in 3 to 10 gallons of water per acre. For the 2 apply in 10 to 40 gallons of water per acre. C mix with residual herbicides when using the 1 Spray when quackgrass is 8 to 12 inches in i actively growing. Do not till between harvest a plications or in foll or spring prior to spring a Allow 3 or more days after appiication before pastures or sods, for bast results use a moldb

Quackgrass—Pasbre or Soil or Other None Where Deep Tillage is Not Plonned Feihming A Apply 2 to 3 quarts in 10 to 40 gallons of wate Spray when the quackgrass is greater than 8 i and actively growing. Do not till between harvs application or in fall or spring prior to spring a Allow 3 or more days after application befor

Reed, giant—For conbol of giant reed, apply a solution of this product when plants are acti ing. Best resvlts are obtained when applic made in late summer to foll.

Swast Potato, wild—Apply this product as a solution using hand-holM equipment. Apply growing weeds that are at or beyond the bloa growth. Repeat applications will be required. plant to reach the recommended stage of gro rebeabnent. Allow 7 or more days before til

Thistle, Canada—Apply 2 to 3 quarts of this p acre. Apply to actively growing thistles when r or beyond the bud stage of growth. Alter han ing or tillage in the late summer or fall, allow weeks for initiation of active growth and roseti ment prior to tie application of this product. ments must be applied before a killing host. more days after application before tillage.

For suppression of Canada thistle, apply 1 qua of tiis product plus 0.5 to 1 percent nonionic by total spray volume in 3 to 10 gallons of wat in the late summer or foil after harvest. mo loge. Allow rnsetse regrowth to a minimum o In diameter before treating. Applications ca as long as leans are still green and plants a growing at tie time of application. Allow 3 or after application before tillage.

Tomadagiass—Apply 4 to 5 quarts of tiis p acre to provide partial control of torpedogras actively growing torpedograss when most pl or beyond the seedhead stage of growth. Re cations will be requirsi to maintain control. ments must be applied before frost. Allow 7 or after application before tillage.

Other perennials listed on this label—Apply 3 of this pnxluct per acre. Apply when actively g most have reached early head or eady bu growth. Allow 7 or mom days after applicat tillage.

TANK MIXTURES

When applied as directed, under the described, Roundup plus Bamel or 2,4-D amii press or control the fallowing perennial broac

Bindweed, tield
Coamlrvlus arvensis

For suppression, apply 16 ounces of this produ ib a.e. of 2,4-D amine or 0.25 lb a.i. of Banve to 1 percent nonionic surfactant by total sp In 3 to 10 gallous of water per acre for grour tions and 3 to 5 gallons of water per acre for a cations. Applications should be delayed until emergence has occuned and when vines are

use of leftover solutions. With all equipment, drain and clean sprayer and wiper parts immediately after using this product by thoroughly flushing with water.

RECIRCULATING SPRAYERS

Recirculating sprayer calibration is made on the basis of ground speed and delivery volume. Two procedures can be used to calibrate: (1) determine the discharge being delivered per minute, then operate at the designated ground speed, or (2) select the desired ground speed and then adjust the sprayer to deliver the recommended volume per minute (this may require nozzle changes). Use the appropriate table below.

Do not operate at nozzle pressure above 20 PSI.

Table 1. Use this table when calibrating boom or row type recirculating sprayers. Boom or row-type sprayer calibration is based on the total discharge collected per row. Use only straight stream or 1b° fan-type nozzles.

*VOLUME PER MINUTE PER ROW	
MPH	Ounces
2	26 to 35
3	38 to 61
4	51 to 68
5	65 to 8S

*NOTE: Be certain the amount collected is for all spray sbeams beating one row.

Table 2. Use this table when calibrating broadcast type recirculating sprayers. Broadcast recirculating sprayer calibration is baaed on the discharge collected per minute from one nozzle on a 20-inch spacing.

VOLUME PER MINUTE PER NOZZLE	
MPH	Ounces
2	7 to 9
3	10 to 13
4	1S to 1S
5	16 to 22

When applied as recommended under the conditions described lor rechculating sprayers, this product will control the following weeds growing a minimum ol 6 inches above desirable vegetation.

Perennial Broadleaf Weeds—To SUPPRESS the following weeds, mix in a ratio of 4 quarts of this product in 20 gallons of wate and apply as directed.

Dogbane, hemp *Apacynum canaabinam*	Milkweed *Asclepias syriaca*

Perennial Orasses and Annual Broadleaf Weeds—To control the followiog weeds, mix in a ratio of 3 quarts of this product in 20 gallons of water and apply as directed:

Cacllebnr *Xanthium strumarium*	Pigweed, redroot *Amaranthus reiroflexus*
Johnsoograss *Sorghum balepense*	SunRower *Helianthus annuas*

Annual Grasses—To control the foDowiog weeds, mix la a ratio of 2 quarts of this product in 20 gallons of water and apply as directed:

Com *Zea meys*	Shattercane *Sorghum bicolar*

SHIEIHED APPLICATORS

When applied as directed under conditions desaibed for shieltied appiitaDis, this product will conbol tiese weeds listed in the "Weeds Conbolled" section of thio label.

Slaelded applicatars whioh apply the herbicide sohrtion as a spray band should be calibrated on a broadcast equivalent rate and volume basis. To determfoe these:

Band width in Inchea / Row widOr in inches	×	Herbicide BroBdeasl RATE per ecre	=	Herbicide Band RATE per acre
Band widtir in inehes / Row width In inches	×	Bioadcast VOLUME of solution per acre	=	Band VOLUME of solution per acie

Ure nozzles that provide uniform coverage widrin the treatod area. EXTREME CARE MUST BE EXERCISED TO AVOID CONTACT WITH DESIRABLE VEGETATION.

For rpecific rates of application and insbuctions for control of various annual and perennial weeds, see the "Weeds Conbolled" section of this label.

WIPER APPLICATORS

Wiper applicators include eithsr roller or wick devices which physically wipe appropriate concentrations or amounts of this pmduct directly onto the weed. Equipment must be designed, maintained, and operated to prevent tire herbicide solution fmm contacting desirable vegetation. Operate thio equipment at ground speeds no greater than 5 mph. Perfonnance may be improved by reducing speed in areas of heavy weed infestations to ensure adequate wiper saturation. Better results may be obtained if two applications ere made io opposite directions.

Do not add surfactant to the herbicide solution.

Rir RoOer Applicatois—Mix 1 gallon of this product in cmugh water to prepare 10 gallons of herticida zolotion (10 percent solution). Apply this solution to perennial weeds or annual bmadleaf weeds listed in this "Wiper Applicators" section.

Mix 1 gallon of this product in enough water fo pnnide 20 gallons of herlicide solution (5 percent solution). Apply this ephrtinn to annual grasses listed he this "Wiper Applicators" section.

Roller speed chould be maintained at 40 to 60 RPM.

Fra Wick or Wiper AppBcators—Mix 1 gallon of this product in 2 gallons of water to prepare a 33 percent solution. Apply tiis solution to weeds listed in Ois "Wiper Applicators" sec tion.

In severe infestations, reduce equipment ground speed to ensure that adequate srnoouto of this product are wiped on the vreeio. A second beeboent in the opposite direction may be beneficial.

Oo not permit herbicide solution to contact desirable vegatation.

when applied as recommended under the conditions described for "Wiper Applicators", this pmduct CONTROLS the following weeds:

ANNUAL GRASSES

Corn *Zea mays*	Rye, common *Secala cereale*
Panicom, Texas *Panicum texanum*	Shatlarcane *Sorgbum bicelor*

MINUAL BROADtLEAVES

Sicllepod *Cssaia obtusifolia*	Starbur, bristly *Aeaothospurmum hispidum*
Spanishpccdles *Bidens bipinnata*	

When applied as recommended under the conditions described for "Wiper Applicators", this product SUPPRESSES the following weeds:

ANNUAL BROAIDLEAVES

Beggarweed, Florida *Desmodium tortuosum*	Ragweed, giant *Ambrosia trifida*
Dogfennel *Eupatorium capillifolium*	SunRower *Helianthus annuus*
Pigweed, redroot *Amaranthus retroflexus*	Thistle, musk *Carduus nutans*
Ragweed, common *Ambrosia artemisiifolia*	Velvetleaf *Abutilon theophrasti*

PENENNIAL BRASSES

Bermudagrass *Cynodon dactylon*	Sranignss *Spambalus poiretii*
Guineagrass *Panicum maximum*	Vaseygrass *Paspalum urvillei*
Johnsongrass *Sorghum halepease*	

PERENNIAL BROAPLEAVES

Dogbane, hemp *Apocynam cannabinum*	Nightshade, silverleaf *Solanum elaeagnifolium*
Milkweed *Aseelepias syriaca*	Thistle, Canada *Cirsium arveose*

WEEDS CONTROLLED

This herbicide conbols many annual and perennial grasses and bmadleaf weeds.

ANNUAL WEEDS

- Apply to actively growing gmss and broadleal weeds.
- Allow at loast 3 days after treabnent before tillage.
- For maximum agronomic benefit apply when weeds ere 6 inches or less in height.
- To prevent seed production, applitations should be made prior to aeedhead formation.
- This praduct does nat provide residual conbol; there fore, delay appliration until maxinum weed emergence. Repeat beabnents may ne necessary to conbo loter germinating weeds.

LOW-VOLUME BROADCAST APPLICATION (LOW-RALE TECNNOLOGV)

When applied as directed under the condition: described, this product will conbol the weeds lisbr below when:

1. Water carrier volomes are S to 10 gallons per acm fo ground applications and 3 to 5 gallons per acie fo aarial applications. (See the "Aerial Application" sec tion of this label for approved sites.)
2. A nonionic surfactant is added at 0.5 to 1 percent b total spray volume. Use 0.6 percent surfactant con centration when using surfactants which contain a least 50 percent active ingredient or a 1 percent sur factant concentration for those surfactants containin less than SO percent active ingredient

NOTE

- The addition of 2 percent dry ammonium sulfate t weight or 17 pounds per 100 gallons oi water ma increase tha performance of this pmduct on annu:

weeds. The improvement in performance may be apparent where environmental stress is a concern. Refer to the "Mixing, Additives and Application Instructions" section of this label.

- Do not tank-mix with soil residual herbicides when using these rates unless otherwise specified.
- For weeds that have been mowed, grazed, or cut, allow regrowth to occur prior to treatment.
- Refer to the "Tank Mixtures" portion of this section for control of additional broadleaf weeds.

WEED SPECIES	MAXIMUM HEIGHT	RATE PER ACRE**
Foxtail *Setaria spp.*	12"	8 oz.
Barnyardgrass *Echinochloa crus-galli*	6" (0 to 4" (4 to 6"	12 oz. 16 oz.[1]) 24 oz.[1])
Bluegrass, annual *Poa annua*		
Brome, downy* *Bromus tectorum*		
Mustard, blue *Chorispura tenella*		
Mustard, tansy *Descurainia pinnata*		
Mustard, tumble *Sisymbrium altissimum*		
Mustard, wild *Sinapis arvensis*		
Spurry, umbrella *Holosteum umbellatum*		
Barley *Hordeum vulgare*	12"	
Rye *Secale cereale*		
Sandbar, field *Carchrus spp.*		
Shattercane *Sorghum bicolor*		
Stinkgrass *Eragrostis cilianensis*		
Wheat *Triticum aestivum*	18"	
Morningglory *Ipomoea spp.*	2"	16 oz.
Sicklepod *Cassia obtusifolia*		
Bluegrass, bulbous *Poa bulbosa*	6"	
Cheat *Bromus secalinus*		
Chickweed, mouseear *Cerastium vulgatum*		
Corn *Zea mays*		
Groundsel, common *Senecio vulgaris*		
Horseweed/Marestail *Conyza canadensis*		
Lambsquarters, common *Chenopodium album*		
Pennycress, field Fanweed *Thlaspi arvense*		
Rocket, London *Sisymbrium irio*		
Ryegrass, Italian *Lolium multiflorum*		
Shepherdspurse *Capsella bursa-pastoris*		
Buttercup *Ranunculus spp.*	12"	
Cocklebur *Xanthium strumarium*		
Crabgrass *Digitaria spp.*		
Dwarfdandelion *Krigia occidentalis*		
Falseflax, smallseed *Camelina microcarpa*		
Foxtail, Carolina *Alopecurus carolinianus*		
Johnsongrass, seedling *Sorghum halepense*		
Oats, wild *Avena fatua*		
Panicum, fall *Panicum dichotomiflorum*		
Panicum, Texas *Panicum texanum*		
Pigweed, redroot *Amaranthus retroflexus*		
Pigweed, smooth *Amaranthus hybridus*		
Witchgrass *Panicum capillare*		
Sicklepod *Cassia obtusifolia*	3 to 4"	24 oz
Signalgrass, broadleaf *Brachiaria platyphylla*	4"	
Horseweed/Marestail *Conyza canadensis*	7 to 12"	
Lambsquarters, common *Chenopodium album*		
Teaweed *Sida spinosa*	4"	32 oz.
Rice, red *Oryza sativa*	6"	
Geranium, Carolina *Geranium carolinianum*	12"	
Goosegrass *Eleusine indica*		
Primrose, cutleaf evening *Oenothera laciniata*		

WEED SPECIES	MAXIMUM HEIGHT	
Pusley, Florida *Richardia scabra*	12"	
Sicklepod *Cassia obtusifolia*	5 to 12"	
Spanishneedles *Bidens bipinnata*		
Fireweed *Erechtites spp.*	12"	

[1]Use these rates in Alabama, Arkansas, Mi Missouri, Louisiana and Texas for preplant tr

*For control in no-till systems, use 1S fluid o acre.

**For these rates less than 32 ounces per product at rates up to 32 ounces per acre nu where heavy weed densities exist

TANK MIXTURES

- ROUNDUP® plus BANVEL plus NONIONIC SURFACTANT
- ROUNDUP plus 2,4-D AMINE plus NONIONIC SURFACTANT

DO NOT APPLY BANVEL OR 2,4-D AMINE T TURES BY AIR IN CALIFORNIA.

These tank mixtures are recommended for no and reduced tillage areas only. Follow use di given in the "Low-Volume Broadcast Ap section.

Roundup plus Banvel or 2,4-D amine will con nual grasses and broadleaf weeds previously Roundup alone at the indicated heights (exce per acre applications), plus the following weeds. For those weeds previously listed at Roundup herbicide alone per acre, use the 12 in these tank mixtures.

NOTE: Refer to the specific product labe mitation restrictions and cautionary stater products used in tank mixtures. Some crop occur if Banvel is applied within 45 days The addition of Banvel to a mixture with t may provide short term residual control weed species.

Apply 12 to 16 ounces of this product plus of Banvel or 0.5 pound a.e. of 2,4-D amine, 1 percent nonionic surfactant by total spray acre to control dense populations of the follo broadleaf weeds when less than 6 inches

Kochia* *Kochia scoparia*	Pigweed, redroot *Amaranthus ret*
Lambsquarters *Chenopodium album*	Thistle, Russian *Salsola kali*
Lettuce, prickly *Lactuca serriola*	

*Controlled with Banvel tank mixture only

HIGH-VOLUME BROADCAST APPLI

When applied as directed under the described, this product will control the v below when water carrier volumes are 10 t per acre for ground applications.

Reduced conbol may result witen applications are made to annual or perennial weeds that have been mowed, grazed, or cut, and have not been allowed to regrow to the recommended stage for beabnent.

Rainfall or irrigation occurring witiin G hours after application may reduce effectiveness. Heavy rainfoll or inigation within 2 hours after application may wash the chemical off the foliage and a repeat beabnent may be required.

This product does not provide residual weed control. For subsequent residual weed conbol, follow a label-approved herticide pngram. Read and carefully observe the cautionary statements and all other infoimation appearing on the labels ot all herticides used.

Buyer and all users ere responsible for all loss or damage in connnection with the use or handling of mixtures of this product with herbicides or other materials that are not expressly recommended in this labeling. Mixing this product with herbicides or other materials not recommended on this label may result in reduced performance.

For best results, spray coverage should be uniform and complete. Do not spray weed foliage to the point of runoff.

Keep people and pets off beated areas until spray solution has dried.

DOMESTIC ANIMALS: This product is considered to be relatively nontoxic to dogs and other domestic animals; however, ingestion of this product or large amounts of freshly sprayed vegetation may result in tamponuy gasbo-intestinal irritatian (vomiting, diarrhea, colic, etc.). If such symptoms are obsenred, provhle tie animal whh plenty of fluids to prevent dehydiation. Call a veterinarian if symptoms persist for more than 24 hours.

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ATTENTION

AVOID ORIFT. EXTREME CARE MUST BE USED WHEN APPLYING THIS PRODUCT TO PREVENT INJURY TO DESIRABLE PLANTS ANO CROPS.

Do nrt alhiw tie herbicide solution to mist. drip, drift, or splash onto desirabte vegetation since minute quantities of thia product can cause severe damage or destruction to the crop, plsnts, or other areas on which t:eatment was not intended. The likelihood of injury occurring from the use of this product is greatest when winds am gusty or in excess of S miles per hour or when other conditions, Inchiding lesser wind vehicities, will allow spray drift to occur. When spraying, avoid combinatfons of pressure and nozzle type Uiat will result in splatter or tine particles (mist) which are likely to drift. AVOID APPLYING AT EXCESSIVE SPEED OR PRESSURE.

NOTE: Use of this pmduct in any manner not consistent with this label may result in injury to persons, animals or cmps, or other unintended consequences. Keep container closed to prevent spills and contamination.

MIXING, ADDITIVES AND APPLICATION INSTRUCTIONS

APPLY THESE SPRAY SOLIITIOHS IN PROPERLY MAINTAINED AND CALIBRATED EQUIPMENT CAPABLE OF DELIVERING DESIRED VOLUMES. OO NOT APPLY UNDER WIND OR OTHER CONDITIONS WHICH JUIiW DRIFT TO OCCUR. HAND GUN APPLICATIONS SHOULD BE PROPERLY DIRECTED TD AVOID SPRAYING DESIRABLE PUMTS. NOTE: REDUCED RESULTS MAY OCCUR IF WATER CONTAINING SOIL IS USED, such as WATER FROM PONOS AND UNLINEO DITCHES.

MIXING

This product mixes rnnlily with water. Mix spray aolutions of this product as follows: Fill the mixing or spray tank with the requhed emoiint of water. Add the pmper amount ot tiis product (see Oie "Directions for Use" and "Weeds fisntrolled" sections of this label) near the end of tie RIBng process and mix well. Remove hnee fmm tank Immediately aftar fOlhig to avoid siphoning back into the carrier soume. Dsring miting and application, foaming of the spray solution may occur. To prevent or minimize foam, avoid the use ci mechanical agitatois, place the filling hose below the surface of Hie spray solu-Uun, terminate by-pass and retom lines at the bottom of the tank and, if needed, use an approved anti-foam or defoaming agent.

TANK MIXIURES

AKways piedetemiine the compatibility of labeled tank naixturos of this pmduct with water carrier by mixing small proportional quantities in advance.

Mix labeled lank mixturet of this product whh water as follows:

1. Plaes a 20 to 35 mesh screen or wetting basket ever filling pert.
2. Through tie screen, fill tie sprayer tank one-half foil with water and start agitation.
3. If a wettabia powder is used, make a slurry witii the water carrier, and add it SLOWLY through tie scieen hito the tank. Continue agitation.
4. If a flowable formulation is used, premix one part flowable with one part water. Add diluted mixture SI OWLY through tie screen into the tanh. Continue agitation.
5. If an emulsifiable concentrate formulation is used, Dromhi one part emulsifiabfo concenbete with tam parts water. Add diluted mid ure slowly through the screen into the tank. Continue agitation.
6. Continue filling tie sprayer tank with water and add the required amount of th's product near the and nf the filling.
7. Where nonionic surfactant is recommended, add this to tie spray tank before corilpieting Oie tilllog process.
8. Add indhidual fbrmulations to tie spray tank as follows: wettsble powder, flowable, emulsifiable concenbate, dritt oonbol edifitive, water soluble liquid followed by surfactant.

Maintain good agitation at aD times until the contents of the tank are sprayed. If the spray mixtum is allowed to settle, thmough agitation is required to resuspend tiie mixture before spraying is resumed.

Keep by-pass line on or near bottom ot tank to minimize foaming. Screen sias in nozzle or line sbainem shouM be no finer than 50 mesh. Carefully sclect proper nozzle to avoid spraying a fine mist. For best resulls witii conventional gmund applications equipment. use flat tan nozzles.

Clean sprayer and parts Immediatcly attar using this product by thoroughly flushing with water.

ADDITIVES

SURFACTANTS

Nonionic surfactants which are labeled for use with herbicides may be used. Do not reduce rates of this product when adding surfactant. When adding additional surfactant or label instmctions requhe die use of additional surfactant, use 0.S pement surfactant concentration (2 quarts per 100 gallons of spray solotion) whai using surfactants which contain at least SO percent active ingredient or a 1 percent surfactant concentration (4 quarts per 100 gallons of spray solution) fnr those surfactants containing less than 50 ptitent active ingredient. Read and carefully observe surfactant cautionary statements and other information appearing on the surfactent label.

AMMONIUM SULFATE

The addition of 2 percent dry ammonium sulfate by weight or 17 pounds per 100 gallons of water may increase the psrformance of this pmduct and this product, plus 2,4-D amine or Banvel™ tank mixtures on annual and petennial weeds. The Improvement in performance may be apparent where environmental sbess is a concern. Low quality ammonium suKate may contain material that will not readily dissolve which could result in nozzle tip plugging. To determine quality, perfnm a jar test by adding ½ cup of ammoniom sulfate to 1 galfon of water and agitato for 1 minute. If undissolved sediment is observed, pmrilssalve the ammonium sulfate in water and filter prior to addition to tie spray tank. If amminhum sulfate is added directly to the spray tank, add skiwly with agitation. Adding too quickly may cing outlet line. Ensure that ammonium sulfate is completely dissolved in the spmy tank beiore adding herbicides or surfactant. Thoroughly rinse the spray system witii clean water aftar use to reduce corroskin.

NOTE: The use of ammonium sulfate as an addithre does not preclude the need for additional surfactant. Do not use hertiicide rates lower than recommended in this tabel.

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COLORANTS OR DYES

Agricalhirally approved cofoiants or marking dyes may be added to this product. Cohvants or dyes used in spray solutions of this product may reduce perfortnanee, speeially at lower rates or dihrtians. Use coforants or dyes according to the manufactuier's recommendations.

APPLICATION EQUIPMENT AND TECHNIQUES

Do not apply this product tirough any type of hrigatfon system.

Ituis product may be applied with tha following application equipment:

Aerial—Fixed Wing and Helicopter

Bimdcast Spray

Conbolled Droplet Applicator (CDA)—Hand-held or boom-mounted applikators wfoch produce a spray consisting of a narrow range of droplet sizes.

Rand-Hald and Hige-Volume Spray Equipment—Knapsack and backpack sprayers, pump-up pressure spmyers, handguns, liandwands, lances and otiiss hand-held spray equipment used to direct the spray onto weed foliage and vehicle-maunted high-volume spray equipment for spmy-to-wet applications.

Selectiro equipmcm—Recimulating sprayers, shielded spmyers and wiper applicators.

See the appiupriate part of this section for specifRc iates of application and instructions.

AERIAL EQUIPMENT

Use the recommended rates of Oils herbicide in 3 to 15 gallons ol water per acre unless otherwise specified on this label See the "Weeds Controlled" section ol tiis tabel for specific rates. Unless oUerwise specified, do not exceed the one-quart rate per acre of this product (Aerial applications of this psoduct may be made in annual cropping conventional tillaga systems, fallow and reduced Ulfoga aystems, prehawest, silvicultnal.ciitas, and right cf-way. Refer to tie individual use area sections of tiis label for recommended wiumes and application iatas.) FOR AERIAL APPLICATION IN CALIFORNVI REFER TO THE FEDERAL SUPPLEMENTAL LABEL FOB AERIAL APPLICATIONS IN THAT STATE FDR SPECITIC INSTRUETIONS, RESTIIICTIONS AND REQUIREMENTS.

This product plus Oust tank mixtures may not be applied by air In Califomia

Avoid direct application to any body of water.

AVOID DRIFT—DO NOT APPLY DURING INVERSION CONDITIONS, WIHEN WINDS ARE GUSTY, OR UNDER ANY OTHER CONDITION WHICH WiLL ALLOW DRIFT. DRIFT MAT CAUSE DAIIAGE TO ANY VEGETATION CONTACTED TO WHICH TREATMENT IS NOT INTENDED. TO PREVENT INJURY TD ADJACENT DESIRABLE VEGETATION, APPROPRIATE BUFFER ZONES MUST BE MAINTAINED.

Coarse sprays are less likely to drift; therefore, do not use nozzles or nozzle conligurations which dispense ipray as fine spray droplets. Do not angle nozzles forward Info the alrstream and do act increase spray volunie by increasbig nozzle pressure.

Drift conbol additives may be used. When a drift conbul additive Is used, read and carefully obsenre the cautionary statements and all other infomiation appearing on tie additive label

Ensure uniform applicatian—To amid sbeaked, uneven or overlapped application, use appropriate marking devices.

Thomughly wash aircraft, especially landing gear, after each day of spraying to remove residues of this product accumulated during spraying or bom spiDs. PROLONGED EXPOSURE OF THIS PRODUCT TO UNCOATED STEEL SURFACES MAY RESULT IN CORROSION AND POSSIBLE FAILURE OF THE PART. LANOING GEAR ARE MOST SUSCEPTIBLE The maintenance of an organic coating (paint) which meeta aerospace specification MIL-C-38413 may prevent corrosfon.

BROADCAST EQUIPMENIT

For contiol of annual m peresnial weeda listad en this hibel using braadcast eqaipment—Use the recommended rates of tiis product in 3 to 40 gallons of water per acre as a broadcast apray unless utherwise specified cn this label. See the "Weeds Ootrolled" section of tbis label for speciiic rates. As density of weeds increases, spray galfonage should be hereased within the recommended range to ensure complete coverege. Carefully select proper mazle to avoid spraying a fine mist Fbr best results with ground application equipment, use flat tan nozzles. Check for even distribution of spray droplets.

CONTItOLLED DROPLET APPLICATION (CDA)

The rate of this product applied per acre by vehicle-mounted CDA equipment must not be less than the amount recommanded in this label when applied ty conventional broadcast equipment. For vehicle-mounted CDA equipment, apply 3 to 15 gallons of vrater per acre. For tha control ol labeled annual weeds with hand-held COA unite, apply a 20 percent solution of this product at a flow rate of 2 fluid ounces per minute and a walking speed of 1.5 MPH (1 quart per acre). fiw the control of labeled perennial weeds, apply a 20 to 40 percent solution of this product at a Row rate of 2 fluid uunces per minute and a waiking speed of 0.75 MPH (2 to 4 quarts per acm).

Controlled droplet application equipment produces a spray pattern which is not easily visible. Exbeme care must be exercised to avoid spray or drift contacting tie foliage cr any other green tissue of desirable vegetatkn, as damage or destruction may resulL

HAND-HELD aod HIGH-VOLUME EQUIPMENT

Use coarse sprays only.

Mix this praduct in clean water and apply to foliage of vegetation to he controlled. For applhadons made on a spray-to-wet basis, spray coverage shouM be uniform and complete. Do not spray to the point of runoff

For ccnbol of annual weeds listed on this fobel, apply a 0.5 percent solution of this product plun nonispic surfactant to weeds less than 6 Inches fo height or runner length. Apply prior to seedhead fonnation hi grass or hud hirmabun in broadleaves. Allow tiuee or more days before tillage or mowiAg.

For annual weeds over 6 inches tall, or when not using additional surfactant, or unless otherwise specified, use a 1 percent solution. For bast results, use a 2 percent soluttru on hanler-to conbol perennials, such as bermudagrass, dock, Oeld bindweed, hemp dogbane, milkweed and Canada thistle.

Less than complete coverage ol weeds may result hum the use of spray equipmant designed for motorized spot traabnents. Where less than complete coverage of annual weeds occurs, use a S percent solution. Do not reduce recommended concentrations of this pmduct when adding surfactant

Pmpare the desired volume of spray solution by mitiing the amount of this product in water as shown in the following table:

Spray SeluBon

DESIRED VOLUIIE	AMOUNT tIF ROUNDUP® ½%	1%	1½%	2%	S%
1 gallon	⅓ oz	1½ oz	2 oz	2½ oz	E½ oz
25 gallons	1 pt	1 qt	1½ ql	2 qt	5 qt
100 gallons	2 qt	1 gal	1H gal	2 gal	5 gal

2 tablespoons = 1 ounce

For use hi knapsack sprayers, it is suggested that the proper amount of tiis pmduct be mixed with water in a larger container. FBI sprayer with the mbred sdution.

For hand-held WIPER APPLICATORS, see tha "Selective Equipment" section and for hand-held CONTROLLED DROPLET AFFLICATORS, see the "Conbolled Droplet Application (CDA)" section of this label.

SELECTIVE EQUIPMENT

This product may be applied tiimugh a recirculating spray systam, a shielded applicator, or a wiper applicator after dilution and thorough mixing with water to listed weeds growing in any nunciop site specified on Uib label and only when specifically recommended In cropping systems.

A recicirculating spray system directs the spray onto weeds gmwing above desirable vegetatio spray solution not intercepted by weeds is coller rotomad to the spray tank for reuse.

A shielded applicator directs the herbicide solut weeds while shielding desirable vegetatfon f herbicide.

A wiper applicator applies Uie herbicide solut weeds by rubbing the weed with an absorbent containing the herbicide solution.

AVOID CONTACT WITH DESIRABLE VEGETATH

Contact of the herbicide solution with Uie dssira tation may result in damage or destruction. Ap used above desired vegetation should be adjusts the lowest spray sb eam or wiper contact point i two inches above the desimble vegetation. Drapl foam, or splatter ot the herbicide soluttion se desirable vegetatkm may result in discoloratio ing, or destruction.

Applications made above tire crops should be m the weeds are a minimum of 6 inches above t able vegetation. Better results may be obtain more ol the weed is exposed to the herbicide Weeds not contacted by the herbicide soluttr be affected. This may occur in dense clump infestatione, or whan the height ol the weeds that not all weeds are contacted. In these h repeat beabnent may be necessary.

See the "Weeds Contmlled" section ot tiis recommended stage of growth for specific w

NOTE

- Maintain equipment in good operating c Avoid leakage or dripping onto deshable v
- Adjust beight of applicator to insure adeq tact with weeds.
- Keep nozzle tips and wiping surfaces clea
- Keep spray patterns aligned into recovery cl the recirculating sprayer.
- Keep sMelds on shielded applicators adjust teel desirable vegetation.
- Maintain recommended miler flPM on rath tors while in use.
- Keep wiper material at proper degree of with herbicide solution.
- DO NOT use wiper equipment when weed
- DO NOT operate equipment at ground spec than 5 mph. Weed conbol msy be aftectm of applkation equipment As weed density reduce equipment ground speed to en coverage at weeds.
- Be aware that, on sloping ground, the he tuttan may mignete, causing clipping on the and diying on the upper end of a wiper a
- Variation in equipment design may affect irol. Witii wiper applicators, the wiping m its orientation must allow defhery of suffic tejes ol the recommended herbicide soluti to the weed.
- Gare must be taken with all types of wipen thist the absorbent material does not bar saturated, causing the herbicide to drip o vegetation.
- Mix only the amount df solution to be use one-day period, as reduced activity may

MATERIAL SAFETY DATA SHEET: UPPER HAND AND SOAP SILO

(000000-000000- -4124)

DATE OF ISSUE 8/18/2004

SUPERSEDES 6/10/2004

SECTION I - GENERAL INFORMATION

Chemical Name & Synonyms
N/A

Trade Name & Synonyms
UPPER HAND AND SOAP SILO

Chemical Family:
PETROLEUM EMJLSION

Formula Mixture --> X

Manufacturer's Name:
CHEMSEARCH DIV. OF NCH CORP.

Address:
BOX 152170
IRVING, TX 75015

Prepared By:
L Boynton/Chemist

Product Code Number
4124

Emergency Phone Number
800-424-9300

SECTION II - HAZARDOUS INGREDIENTS
THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

Chemical Name (Ingredients)	Hazard	TLV	PEL	STEL	CAS #
SYNTHETIC ISOPARAFFINIC HYDROCARBON	IRRITANT	5 MG/M3 $1	5 MG/M3 $2	10MG/M3 $1	64742-47-8
WHITE MINERAL OIL	IRRITANT	5 MG/M3 $1	5 MG/M3 $2	10MG/M3 $1	$$
POLYETHYLENE HOMOPOLYMER	IRRITANT	N/E 1	N/E 2	N/E	9002-88-4

$ OIL MIST
$$ 8042-47-5, 72623-67-1, 64742-55-8

SECTION III - PHYSICAL DATA

Boiling Point (F):	>200°	Specific Gravity (H20=1):	0.86
Vapor Pressure (MM HG):	18.5	Color:	MUSTARD YELLOW
Vapor Density (Air=1):	0.6	Odor:	SEASHORE
pH @ 100% :	8.6	Clarity:	OPAQUE
Volatile By Volume:	99	Evaporation Rate (BU Ac=1):	0.3
H20 Solubility:	APPRECIABLE	Viscosity:	VISCOUS

SECTION IV - FIRE AND EXPLOSION HAZARD

Flash Point	Flammable Limits	LEL	uEL
>200°F / SETA-FLASH	PETROLEUM DISTILLATE	0.5%	4.9%

Extinguishing Media
X <--Foam X <--Alcohol Foam X <--CO2 X <--Dry Chemical X <--Water Spray <--other

Special Fire Fighting Procedures:
FIREFIGHTERS SHOULD WEAR A SELF-CONTAINED BREATHING APPAPATUS AND FULL PROTECTIVE GEAR. COOL FIRE-EXPOSED CONTAINERS WITH WATER SPRAY TO PREVENT BURSTING.

unusual Fire and Explosion Hazards:
THE USE OF WATER SPRAY (FOG) WHILE EFFECTIVE, MAY CAUSE FROTHING AND FOAMING. NEVER USE A WATER JET AS THIS WILL JUST SPREAD THE FIRE. USE CARE AS SPILLS MAY BE SLIPPERY.

Aerosol Level (NFPA 30B): N/A

NFPA 704 Hazard Rating (0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme)
1 <--Health 1 <--Flammability 0 <--Instability <--Special

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value:
5 MG/M3 AS OIL MIST 1.

Effects of Overexposure:

-Acute (Short Term Exposure)

EYE CONTACT: CAUSES IRRITATION SEEN AS STINGING, TEARING, AND REDNESS.
SKIN CONTACT: MAY CAUSE IRRITATION SEEM AS ITCHING AND REDNESS IN SENSITIVE INDIVIDUALS. PROLONGED OR REPEATED CONTACT MAY CAUSE DRYING AND CHAPPING OF THE SKIN.
INHALATION: MAY CAUSE RESPIRATORY IRRITATION SEEN AS COUGHING AND SNEEZING. AT LOW VAPOR CONCENTRATIONS, NO HARMFUL EFFECTS ARE EXPECTED. AT HIGH VAPOR CONCENTRATIONS AND AT ELEVATED TEMPERATURES, INHALATION MAY CAUSE CENTRAL NERVOUS SYSTEM EFFECTS SUCH AS HEADACHE, DIZZINESS, DROWSINESS, WEAKNESS, UNCONCIOUSNESS, POSSIBLE ANESTHETIC EFFECTS FROM CENTRAL NERVOUS SYSTEM DEPRESSION, AND MAY BE FATAL.
INGESTION: MAY CAUSE IRRITATION WITH POSSIBLE NAUSEA, VOMITING, AND DIARRHEA.

-Chronic (Long Term Exposure)

ON RARE OCCASIONS, PROLONGED AND REPEATED EXPOSURE TO HYDROCARBON MIST POSES A RISK OF CHRONIC LUNG INFLAMMATION. THIS CONDITION IS USUALLY ASYMPTOMATIC AS A RESULT OF FEPEATED SMALL ASPIRATIONS. SHORTNESS OF BREATH AND COUGHING ARE THE MOST COMMON SYMPTOMS. ASPIRATION MAY LEAD TO PULMONARY EDEMA AND HEMORRHAGE AND MAY BE FATAL. SIGNS LUNG INVOLVEMENT INCLUDE INCREASED RESPIRATION AND HEART RATES AS WELL AS A BLUISH DISCOLORATION OF THE SKIN. CHRONIC SKIN CONTACT MAY PROMOTE DERMATITIS AND OIL ACNE. IN RARER CASES, AN INCREASED SENSTIVITY TO SUNLIGHT (PHOTOSENSITIVITY) MAY OCCUR.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE ARE PRE-EXISTING [illegible] AND SKIN CONDITIONS SUCH AS ASTHMA, EMPHYSEMA, AND DERMATITIS.

SECTION V - HEALTH HAZARD DATA (Continued)

TARGET ORGANS: CENTRAL NERVOUS SYSTEM. THE PRIMARY ROUTES OF EXPOSURE ARE SKIN AND EYE CONTACT.

Primary Routes of Entry: X <--Inhalation <--Ingestion <--Absorption

Emergency and First Aid Procedures:

-Inhalation:
REMOVE FROM THE AREA TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

-Eye Contact:
RINSE THE EYES WITH WATER. REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING WITH PLENTY OF WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

-Skin Contact:
WASH AFFECTED AREAS WITH PLENTY OF SOAP AND WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

-Ingestion:
GIVE 3 TO 4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. SEEK MEDICAL ATTENTION IF DISCOMFORT OCCURS.

-Notes to Physician:
THERE IS NO SPECIFIC ANTIDOTE. TREAT THE PATIENT SYMPTOMATICALLY.

SECTION VI - TOXICITY INFORMATION

Product Contains Chemicals Listed as Carcinogen or Potential Carcinogen By:
IARC--> No NTP--> No OSHA--> No ACGIH--> No OTHER--> No

TOTAL VOC CONTENT: 41.2% BY WEIGHT, 46.5% BY VOLUME, 355.6 G/L
VOC CONTENT (WITH LOW VAPOR PRESSURE EXEMPTION): 0.7% BY WEIGHT, 0.6% BY VOLUME, 5.9 G/L

SYNTHETIC ISOPARAFFINIC HYDROCARBON
IHL-RAT LC50: >290 PPM 3.
ORL-RAT LD50: >10 G/KG 3.
SKN-RBT LD50: >3 G/KG 3.
SKN SENSITIZER: NO 3.
SKN IRRITATION: SLIGHT 3.
EYE IRRITATION: SLIGHT 3.

THIS HYDROCARBON WAS ADMINISTERED ORALLY 5 DAYS/WEEK TO MALE AND FEMALE RATS AT 100, 500, AND 1000 MG/KG FOR 13 WEEKS. AN ADDITIONAL GROUP WAS DOSED WITH 100 MG/KG FOR 13 WEEKS FOLLOWED BY A 4-WEEK RECOVERY PERIOD. NO MORTALITIES OR CLINICAL EFFECTS WERE OBSERVED. LIVER AND KIDNEY WEIGHTS FOR THE 500 AND 1000 MG/KG EXPOSURE GROUPS WERE SIGNIFICANTLY INCREASED. AFTER THE 4-WEEK RECOVERY PERIOD, THERE WERE NO DIFFERENCES IH ORGAN WEIGHTS. 3.

WHITE MINERAL OIL
ORL-RAT LD50: > 5000 MG/KG 3.
SKN-RBT LD50: > 2000 MG/KG 3.
EYE-RBT SDT: NON-IRRITATING 3.
SKN-RBT SDT: NON-IRRITATING 3.
BUEHLER GUINEA PIG SENSITIZATION TEST: NON-SENSITISING 3.
SKN-RBT SUB-CHRONIC: 28-DAY NON-IRRITATING 3.
SKN-MSE CHRONIC: 104-WEEK NO SKIN TUMORS AT SITE OF APPLICATION 3.

LIFETIME MOUSE SKIN PAINTING STUDIES INDICATED THAT THIS PRODUCT IS NOT MUTAGENIC OR CARCINOGENIC. 3.

MINERAL OIL MISTS DERIVED FROM HIGHLY REFINED OILS ARE REPORTED TO HAVE LOW ACUTE AND SUB-ACUTE TOXICITIES IN ANIMALS. EFFECTS FROM SINGLE AND SHORT-TERM REPEATED EXPOSURES TO HIGH CONCENTRATIONS WELL ABOVE APPLICABLE WORKPLACE EXPOSURE LEVELS INCLUDE LUNG INFLAMMATORY REACTION, LIPOID GRANULOMA FORMATION, AND LIPOID PNEUMONIA. IN ACUTE AND SUB-ACUTE STUDIES INVOLVING EXPOSURES TO LOWER CONCENTRATIONS AT OR NEAR CURRENT WORK PLACE EXPOSURE LEVELS PRODUCED NO SIGNIFICANT TOXICOLOGICAL EFFECTS. IN LONG TERM STUDIES (UP TO TWO YEARS) NO CARCINOGENIC EFFECTS HAVE BEEN REPORTED IN ANY ANIMAL SPECIES TESTED. THESE PETROLEUM DISTILLATES ARE SEVERELY HYDROTREATED, SEVERELY SOLVENT EXTRACTED, AND/OR PROCESSED BY MILD HYDROTREATMENT AND EXTRACTION. FOR THIS REASON, THEY ARE NOT CLASSIFIED AS CANCER HAZARDS. 3.

POLYETHYLENE HOMOPOLYMER
IHL-MOUSE LC50: 12 GM/MG/30M 3.

RATS INHALING POLYETHYLENE DUST DEVELOPED MILD INFLAMMATORY CHANGES IN THE LUNGS. PROLONGED INHALATION OF THERMAL DEGRADATION PRODUCTS FROM POLYETHYLENE CAUSED NEUROLOGICAL EFFECTS IN RATS. 3.

ANIMAL STUDIES SHOWED NO ADVERSE HEALTH EFFECTS ON THE DIGESTIVE SYSTEM WHEN FED UP TO 20% POLYETHYLENE. 3.

SUBCHRONIC, 50 TO 90 DAY, FEEDING STUDIES CONDUCTED ON RATS, DOGS, AND SWINE SHOWED NO EFFECTS FROM DIETARY LEVELS OF 1 TO 20% POWDERED AND SHREDDED POLYETHYLENE. IARC HAS LISTED POLYETHYLENE AS A GROUP 3 SUBSTANCE. 3.

SECTION VII - REACTIVITY DATA

Stability: X <--Stable <--Unstable
Conditions to Avoid:
AVOID HEAT, HOT SURFACES, SPARKS, AND OPEN FLAMES; DIRECT SUNLIGHT OR ULTRAVIOLET LIGHT.

Incompatibility (Materials to Avoid):
STRONG OXIDIZING AGENTS SUCH AS CHLORINE BLEACH AND CONCENTRATED HYDROGEN PEROXIDE; STRONG ALKALIES, FUMING NITRIC ACID.

Hazardous Decomposition Products:
OXIDES OF CARBON, OLEFINIC AND PARAFFINIC COMPOUNDS, ORGANIC ACIDS, KETONES, ALDEHYDES, ALCOHOLS, ISOPROPANOL.

Hazardous Polymerization: <--May Occur X <--Will Not Occur
Conditions to Avoid:
N/A

SECTION VIII - SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Released or Spilled:
WEAR APPROPRIATE PROTECTIVE CLOTHING. USE CARE AS SPILLS MAY BE SLIPPERY. SHUT OFF SOURCE OF LEAK. DIKE AND CONTAIN SPILL. ABSORB WITH AN INERT MATERIAL AND TRANSFER ALL MATERIAL INTO A PROPERLY LABELED CONTAINER FOR DISPOSAL. PREVENT PRODUCT FROM CONTAMINATING SOIL OR FROM ENTERING SEWAGE AND DRAINAGE SYSTEMS AND BODIES OF WATER. FLUSH AREA WITH WATER.

Waste Disposal Method(s):

SECTION VIII - SPILL OR LEAK PROCEDURES (Continued)

DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

Neutralizing Agent:
N/A

SECTION IX - SPECIAL PROTECTION INFORMATION

Required Ventilation:
GENERAL VENTILATION IS NORMALLY ADEQUATE. LOCAL VENTILATION IS RECOMMENDED TO CONTROL EXPOSURE FROM OPERATIONS THAT CAN GENERATE EXCESSIVE LEVELS OF VAPORS OR MISTS. LOCAL VENTILATION IS PREFERRED, BECAUSE IT PREVENTS DISPERSION INTO WORK AREAS BY CONTROLLING IT AT ITS SOURCE.

Respiratory Protection:
RESPIRATORS SHOULD BE SELECTED BY AND USED UNDER THE DIRECTION OF A TRAINED HEALTH AND SAFETY PROFESSIONAL FOLLOWING REQUIREMENTS FOUND IN OSHA'S RESPIRATOR STANDARD (29 CFR 1910.134) AND ANSI'S STANDARD FOR RESPIRATORY PROTECTION (Z88.2-1992). FOR CONCENTRATIONS ABOVE THE TLV AND/OR PEL BUT LESS THAN 10 TIMES THESE LIMITS, A NIOSH APPROVED HALF-FACEPIECE RESPIRATOR EQUIPPED WITH APPROPRIATE CHEMICAL CARTRIDGES MAY BE USED. FOR CONCENTRATIONS GREATER THAN 10 TIMES THE TLV AND/OR PEL, CONSULT THE NIOSH RESPIRATOR DECISION LOGIC FOUND IN PUBLICATION NO. 87-116 OR ANSI Z88.2-1992.

Glove Protection:
NEOPPEME OR NITRILE RUBBER GLOVES IF REPEATED OR PROLONGED SKIN CONTACT IS LIKELY. ENSURE COMPLIANCE WITH OSHA'S PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD FOR HAND PROTECTION, 29 CFR 1910.138.

Eye Protection:
SAFETY GLASSES WITH SIDE SHIELDS IF THE METHOD OF APPLICATION PRESENTS THE LIKELIHOOD OF EYE CONTACT. ENSURE COMPLIANCE WITH OSHA'S PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD FOR EYE AND FACE PROTECTION, 29 CFR 1910.133.

Other Protection:
WEAR GENERAL-DUTY WORK CLOTHES AND SHOES. REMOVE OIL SOAKED CLOTHING AND SHOES. WASH CLOTHING AND CLEAN SHOES BEFORE REUSE. A SAFETY SHOWER AND AN EYEWASH STATION SHOULD BE AVAILABLE.

SECTION X - STORAGE AND HANDLING INFORMATION

Storage Temperature: Indoors--> X Outdoors--> Heated--> Refrigerated-->
Minimum Temperature: 35°F Maximum Temperature: 100°F

Precautions to be Taken in Handling and Storing:
ALWAYS STORE MATERIAL IN ITS ORIGINAL CONTAINER, OUT OF DIRECT SUNLIGHT. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. KEEP FROM FREEZING. IF PRODUCT FREEZES ALLOW IT TO SLOWLY WARM TO ROOM TEMPERATURE AND STIR THOROUGHLY BEFORE USING.

Other Precautions:
KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL DIRECTIONS. TRACES OF FREE ETHYLENE OXIDE MAY BE PRESENT IN THIS PRODUCT AND COULD ACCUMULATE IN THE HEADSPACE OF STORAGE AND TRANSPORT VESSELS.

SECTION XI - REGULATORY INFORMATION

Chemical Name	CAS Number	Upper % Limit
None		

Those ingredients listed above are subject to the reporting requirements of 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Please call 1-800-527-9919 for additional information if you are a California customer.
This MSDS is not intended for users in the state of California.

SECTION XII - REFERENCES

1. THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH, 2004.
2. OSHA PEL.
3. VENDOR'S MSDS.
4. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, CCINFOWeb, 2004.

ALL THE COMPONENTS OF THIS PRODUCT ARE IN COMPLIANCE WITH THE TOXIC SUBSTANCES CONTROL ACT (TSCA) AND ARE EITHER LISTED ON THE TSCA INVENTORY OR OTHERWISE EXEMPTED FROM LISTING.

IRR:IRRITANT, FIAM/FLAMM:FLAMMABLE, COMB:COMBUSTIBLE, CORR:CORROSIVE CARC:CARCINOGENIC, TOX:TOXIC, N/A:NOT APPLICABLE, N/E:NOT ESTABLISHED, COC:CLEVELAND OPEN CUP, PMCC:PENSKY-MARTIN CLOSED CUP, TCC:TAGLIABUE CLOSED CUP, LEL:LOWER EXPLOSION LIMIT, UEL:UPPER EXPLOSION LIMIT, NFPA:NATIONAL FIRE PROTECTION ASSOCIATION, IARC:INTERNATIONAL AGENCY FOR THE RESEARCH ON CANCER, NTP:NATIONAL TOXICOLOGY PROGRAM, OSHA:OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION, ACGIH:AMERICAN CONFEPENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, TLV:THRESHOLD LIMIT VALUE, PEL:PERMISSIBLE EXPOSURE LIMIT, STEL:SHORT-TERM EXPOSURE LIMIT, MLD:MILD, MOD:MODERATE, SEV:SEVERE, MUT:MUTAGENIC, ASPHYX:ASPHYXIANT, PNOS:PARTICLES (INSOLUBLE) NOT OTHERWISE SPECIFIED, SDT:STANDARD DRAIZE TEST, ORL:ORAL, IHL:INHALATION, HMN:HUMAN

Tarr, LLC

COMMITTED TO "RESPONSIBLE DISTRIBUTION"

Date: 4/19/2007
Fax Number:

From:
Attention: PACIFIC TERMINAL SERVICES INC.
Company: PACIFIC TERMINAL SERVICES INC.
PO BOX 24005

Seattle, WA 98124

RECEIVED
APR 23 2007
BY:

Subject:

For your safety and compliance needs and in accordance with the Hazard Communication Standard (29 CFR 1910.1200) from the Occupational Safety and Health Administration (OSHA), we are enclosing a material safety data sheet (MSDS) for the following:

Tarr Product Code(s):

S365 MINERAL SPIRITS 365

in the U.S., the MSDS must be made available to your employees and should be used for the education and training of the properties, hazards, and protection requirements related to the products which you purchase from Tarr, LLC.

The MSDS contains information that will help you comply with various U.S. and International chemical control laws and regulations. These include, but are not limited to, SARA, CERCLA and some Right-to-Know laws in the U.S. If you resell this product, the information must be passed along to your customer.

We appreciate your business. If you require additional MSDS', please contact Dana Warren at (503) 288-5294 X235.

Sincerely,

Patricia Rodabaugh
Compliance Manager

Enclosure(s)

Corporate Headquarters

Portland: 503-288-5294
800-422-5069
Fax: 503-288-0421

2429 N. Borthwick Avenue
P.O. Box 12570
Portland, OR 97212-0570

Seattle: 253-859-2979
800-209-9358
Fax: 253-859-3020

Phoenix: 602-233-2000
800-350-2436
Fax: 602-233-9190

www.tarrllc.com

MATERIAL SAFETY DATA SHEET

Tarr

Date Issued: 06/30/2005
MSDS No: S365
Date-Revised: 03/09/2007
Revision No: 1

MINERAL SPIRITS 365

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MINERAL SPIRITS 365
PRODUCT CODE: S365
ALTERNATE TRADE NAME(S): SOLVENT 365, S325

MANUFACTURER

Distributed by Tarr, LLC
P.O. Box 12570
Portland OR 97212
Service Number: 503-288-5294

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (US Transportation) :(800) 424 - 9300
CANUTEC (Canadian Transportation) :(613) 996 - 6666

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: WARNING! Flammable liquid and vapor. **Harmful** or fatal if swallowed. Vapor harmful. May cause central nervous system depression. May be irritating to eyes and skin.

POTENTIAL HEALTH EFFECTS

EYES: Liquid is moderately irritating to the eyes. **High** vapor concentrations may also be irritating. Direct contact with the liquid or exposure to its vapors or mists may cause stinging, tearing, redness.

SKIN: Liquid is mildly irritating to the skin. **Prolonged** or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INGESTION: Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspiration pneumonitis.

INHALATION: Vapors may be irritating to the nose, throat, and respiratory tract. Exposure to high vapor concentrations may cause central nervous system (CNS) depression.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

ACUTE TOXICITY: Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis.

MEDICAL CONDITIONS AGGRAVATED: Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product.

COMMENTS HEALTH: Male rats exposed for 90 days by inhalation to vapors of similar solvents showed evidence of kidney damage. The relevance of this effect to humans is unknown. In one of the studies a low grade anemia was also observed.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Solvent naphtha (petroleum), medium aliphatic	100	064742-88-7

COMMENTS: Contains the following constituents: Xylenes (1330-20-7) less than 1 % by weight and trimethylbenzene, 1,2,4,- less than 1% by weight.

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention, if irritation occurs or persists.

SKIN: Immediately wash skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

INGESTION: If swallowed, **DO NOT INDUCE** vomiting. If conscious, have victim rinse mouth out with water, then drink sips of water to remove taste from mouth. **DO NOT GIVE LIQUIDS TO A DROWSY, CONVULSING OR UNCONSCIOUS PERSON.** If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Transport to nearest medical facility for additional treatment.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: (110°F) to (143°F) TAG CC

FLAMMABLE LIMITS: 0.01 to 0.07

AUTOIGNITION TEMPERATURE: No data available.

EXTINGUISHING MEDIA: Use water fog, "alcohol" foam, dry chemical, or CO2.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

EXPLOSION HAZARDS: When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

FIRE FIGHTING PROCEDURES: Clear fire area of all non-emergency personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus. Containers exposed to intense heat from fires should be cooled with large quantities of water to prevent weakening of container structure which could result in container rupture.

FIRE FIGHTING EQUIPMENT: The use of SCBA is recommended for firefighters. Water spray may be used to cool containers exposed to heat or flame.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: Remove all sources of ignition and provide ventilation. Wear protective clothing as given in section 8. Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material with absorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal using non-sparking equipment. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for proper disposal.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep away from heat, sparks, and flame. Surfaces that are hot may ignite even liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

STORAGE: Store away from heat, sparks, and open flame. Keep containers tightly closed when not in use. Do not weld, cut, grind, solder, or drill on or near empty containers. Empty containers may contain explosive concentrations of product vapors.

STORAGE TEMPERATURE: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

COMMENTS: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue (liquid and/or vapor) and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition; they may explode and cause injury or death.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Chemical splash goggles and face shield in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your industrial hygienist.)

SKIN: Wear resistant gloves (consult your safety equipment supplier). To prevent repeated or prolonged skin contact, wear impervious clothing and boots.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Sec. 8) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-suppling respirator or an air-purifying respirator for organic vapors.

PROTECTIVE CLOTHING: Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK HYGIENIC PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid

ODOR: Mild odor.

COLOR: Clear, colorless liquid.

pH: 5.5 to 6.0

PERCENT VOLATILE: 100

VAPOR PRESSURE: < 5

VAPOR DENSITY: Heavier than air.

BOILING POINT: (320°F) to (372°F)

FREEZING POINT: NDA = no data available.

MELTING POINT: No data available.

FLASHPOINT AND METHOD: (110°F) to (143°F) **TAG CC**

SOLUBILITY IN WATER: Negligible

EVAPORATION RATE: Slower than ether.

DENSITY: 6.4

SPECIFIC GRAVITY: 0.775 to 0.785

(VOC): 6.400 lbs./gal.

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

CONDITIONS TO AVOID: Avoid heat, sparks, flame and contact with strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

INCOMPATIBLE MATERIALS: Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

ACUTE

Chemical Name	ORAL LD_{50} (rat)	DERMAL LD_{50} (rabbit)	INHALATION LC_{50} (rat)
Solvent naphtha (petroleum), medium aliphatic	25000	> 4000	> 700

CHRONIC: Laboratory studies have shown that petroleum distillates may cause kidney, liver, or lung damage. Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage. Not listed as a carcinogen by the **NTP**, **IARC**, or **OSHA**.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. **US EPA** guidelines for the classification determination are listed in 40 **CFR**. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Petroleum distillates, n.o.s.

TECHNICAL NAME: (naphtha solvent)

PRIMARY HAZARD CLASS/DIVISION: Combustible liquid

UN/NA NUMBER: UN 1268

PACKING GROUP: III

NAERG: 128

OTHER SHIPPING INFORMATION: USDOT combustible exception: 173.150(f)(1).

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.

FIRE: Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes

313 REPORTABLE INGREDIENTS: Xylenes (CAS 1330-20-7) and Trimethylbenzene, 1,2,4,- (CAS 95-63-6)

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: To the best of our knowledge, this product is not listed as an extremely hazardous substance.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

16. OTHER INFORMATION

PREPARED BY: P. Rodabaugh

REVISION SUMMARY: Revision #: 1 This MSDS replaces the March 08, 2006 MSDS. Any changes in information are as follows: In Section 1 Reason for Issue In Section 14 DOT Primary Hazard Class/Division Labels Other DOT Shipping Information In Section 15 SARA 311/312 Hazard Categories 302/304 Emergency Planning In Section 16 Additional MSDS Information

HMIS RATING

HEALTH:	1
FLAMMABILITY:	2
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	H

MANUFACTURER DISCLAIMER: The information contained herein is based on the data available to us and is believed to be accurate. However, Tarr Acquisition, LLC (Tarr, LLC) makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Tarr, LLC assumes no responsibility for injuries from the use of the product described herein.

MATERIAL SAFETY DATA SHEET

OLVENT 365

Tarr

Portland, Oregon
Phoenix, Arizona
Auburn, Washington
Vancouver, Washington

Print Date: 7/25/2002

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: Distributed by Tarr, Incorporated
P. O. Box 12570
Portland, OR 97212

INFORMATION PHONE: 503-288-5294

EMERGENCY PHONE: CHEMTREC 800-242-9300 (US) Day or night
International Call Collect CHEMTREC 202-483-7616

PRODUCT NAME: SOLVENT 365

PRODUCT NUMBER: S365

UPC NUMBER:

PREPARED BY Patricia Rodabaugh

DATE PREPARED: 7/25/2002

LAST REVISION: 1/11/2002

SYNONYMS: Mineral Spirits 365, Alaska Stoddard Solvent

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Solvent naphtha, mineral spirits	64742-88-7	100	100 ppm	100 ppm
Xylene	1330-20-7	<1	100 ppm	100 ppm
Trimethylbenzene, 1,2,4,-	95-63-6	<1	25 ppm	25 ppm

3. HAZARDOUS IDENTIFICATION

EMERGENCY OVERVIEW: WARNING! Flammable liquid and vapor. Harmful or fatal if swallowed. Vapor harmful.

POTENTIAL HEALTH EFFECT

EYE CONTACT: Liquid is moderately irritating to the eyes. High vapor concentrations may also be irritating.

INHALATION: Vapors may be irritating to the nose, throat, and respiratory tract. High vapor concentrations may cause central nervous system (CNS) depression.

INGESTION: Ingestion of product may result in vomiting; aspiration (breathing) of vomitous into the lungs must be avoided as even small quantities may result in aspiration pneumonitis.

SKIN CONTACT: Liquid is slightly irritating to the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

SIGNS AND SYMPTOMS OF EXPOSURE:
Irritation as noted above. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumonitis may be evidenced by coughing, labored breathing an cyanosis.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. If irritation occurs, get medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Get medical attention immediately.

INGESTION: DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

SKIN CONTACT: Remove contaminated clothing/shoes. Flush dun with water. Follow by washing with soap and water. If irritation occurs, get medical attentiom. Do not reuse clothing until cleaned.

AGGRAVATED MEDICAL CONDITIONS:

Preexisting eye, sldn and respiratory disorders may he aggravated by exposure to this product

SUPPLEMENTAL HEALTH INFORMATION:

Male rats exposed for 90 days by inhalation to vapors of similar solvents showed evidence of lddney damage. The relevance of this effect to humans is unkitown. In one of the studies a low grade anemia was also observed.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASH POINT: 110 F **FLASH POINT METHOD USED:** Tag Closed Cup

AUTOIGNITION: NDA **LEL:** 0.01 **UEL:** 0.07

EXTINGUISHING MEDIA:

Use water fog, "aicohol" foam, dry cheenical, or CO2.

SPECIAL FIRE FIGHTING PROCEDURES:

Firefighters should wear proper pintective equipment and self-contained breathing apparatus with fiill facepiece in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

When heated above the flash point this material emits flammable vapors which, when mbted with air, can bum or be explosive. Fine mist cr spray may be flammable at temperatures below the flash point

COMBUSTION PRODUCTS:

Carbon monoxide and unidentified organic compounds may be formed during combustion.

6. ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IN CASE MATERIAL IS SPILLED OR RELEASED:

Remove all sources of ignition and provide ventilation. Wear protective equipment as given in Section 8. Dike around large spills to prevent epreading. Absorb small spills with inert material (clay, sand). Prevent contamination of surface waters.

7. HANLDING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Keep away from heat, sparks, and flame. Surfaces that are hot may ignite even liquid product in the absence of sparka or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignitkm prior to use and until all vapors are gone.

OTHER PRECAUTIONS:

KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

RESPIRATORY PROTECTION:

If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-suppling respir. of an air-purifying respir. for organic vapors.

VENTILATION:

Provide exhaust ventilation sufiicient to keep the airbome concentratioo of this product below its exposure limits Use explosion-pcoof ventilation as required to control vapor concentrations.

PROTECTIVE GLOVES:

Test data indicate the best psotection is provided by nitrile gloves.

EYE PROTECTION:

Use chemical safety goggles and/or full face shield where splashing is possible. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work areas.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT:

Wear gloves and protective clothing which are impervious to this product for the duration of anticipated exposure, if there is potential for skin contact.

WORK / HYGENIC PRACTICES:

Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

ENGINEERING CONTROLS:

Facilities storing or utilizing this material should be equipped with and eyewash facility and a safety shower.

EXPOSURE GUIDELINES:

May be harmful or fatal if swallowed. May irritate body tissues. Use with adequate ventillation. Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

SOLUBILITY IN WATER: Solubility negligible in water

APPEARANCE AND ODOR: Colorless, clear liquid. Mild odor.

BOILING POINT:	320-372	**PERCENT VOLATILE:**	100
VAPOR PRESSURE:	< 5	**PH:**	5.5 - 6
EVAPORATION RATE:	Slower than ether	**MOLECULAR WEIGHT:**	**NDA**
POUNDS PER GALLON:	6.5	**VAPOR DENSITY:**	Heavier than air
SPECIFIC GRAVITY:	0.775-0.785	**OTHER PROPERTIES:**	**VOCS: 6.4 LBS./GAL.**
MELTING POINT:	**NDA**		
FREEZING POINT:	**NDA**		

10. STABILITY AND REACTIVITY

STABILITY: Stable

CONDITIONS TO AVOID: Avoid heat, sparks, flame and contact with strong oxidizing agents.

INCOMPATIBILITY:

Strong oxidizers.

HAZARDOUS DECOMPOSITION OR BY PRODUCTS:

Carbon monoxide and unidentified organic compounds may be formed during combustion.

HAZARDOUS POLYMERIZATION: Will Not Occur

CONDITIONS TO AVOID: Avoid heat, flame, and other sources of ignition.

11. TOXICOLOGY INFORMATION

Laboratory studies have shown that petroleum distillates may cause kidney, liver, or lung damage. reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervouus system damage.

12. ECOLOGICAL INFORMATION

Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan shoukl.be developed and implemented.

3. DISPOSAL CONSIDERATIONS

The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

14. TRANSPORTATION INFORMATION

DOT CLASS:	Flanunable liquid	**PACKING GROUP:**	III
HAZARD CLASS:	3	**GUIDE NUMBER:**	128
UN NUMBER:	UN 1268	**PROPER SHIPPING NAME:**	Petroleum distillates, n.o.s. (naphtha solvent)

1S. REGULATORY INFORMATION

This product is listed on die EPA/TSCA hiventory of Chemical Substances. Ethyl Benzene (CAS # 100-41-4) 0.01 lbs./gal., Xylene (CAS # 1330-20-7) 0.05 lbs./gal.

16. OTHER INFORMATON

HMIS INFORMATION: **HEALTH:** 1 **FLAMMABILITY:** 2 **REACTIVITY:** 0 **PROTECTIVE:** H

SARA Tide III Information:

SARA 302:	To the best of our knowledge, this product is not listed as an extremely hazardous substance.
SARA 311/312:	This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.
SARA 313:	Xylene (1330-20-7), ethyl benzene

N/A = Not Applicable
NDA = No Data Available

Disclaimer

The infonnation contained herein is based on the data availablc to us and is bcbeved to be accurate. However, Tarr, Incorporated makes no warranty, expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof Tarr, Inc. assumes no responsibility for injuries from the use of the product described herein.

WESCO

MATERIAL SAFETY DATA SHEET

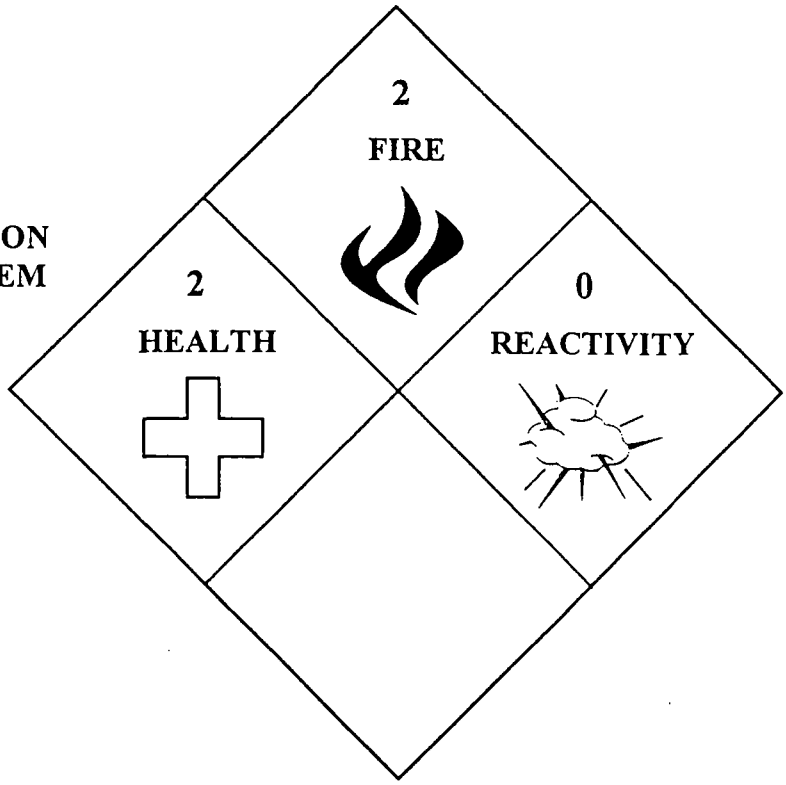
WESCO 105 SOLVENT

DANGER! HARMFUL OR FATAL IF SWALLOWED
COMBUSTIBLE
KEEP OUT OF REACH OF CHILDREN

Wesco 105 Solvent is either new or reclaimed petroleum distillate or blend thereof. When new, the solvent was purchased as Shell Mineral Spirits **200 HT**. Wesco has added approximately 50 ppm of C.I. Solvent Blue 58 as an identifier. The addition of this color causes the solvent to be medium blue in color.

Please refer to Shell's Material Safety Data Sheet that follows for further information. Shell's emergency phone number is: **713-473-946L** Chemtrec's emergency phone number is: **800-424-9300.**

NFPA HAZARD IDENTIFICATION CODING SYSTEM



Wesco Parts Cleaners

PO Box 426
Canby, Oregon 97013

PHONE (503) 266-2028
FAX (503) 266-2129

MATERIAL SAFETY DATA SHEET

Shell

973S7 (4-85)

MSDS NUMBER ▶ 7,593-3 PAGE 1

24 HOUR EMERGENCY ASSISTANCE	GENERAL MSDS ASSISTANCE
SHELL: 713-473-9461 CHEMTREC: 800-424-9300	SHELL: 713-241-4819

ACUTE HEALTH *	FIRE	REACTIVITY	HAZARD RATING ▶
2	2	0	LEAST - 0 SLIGHT - 1 MODERATE - 2 HIGH - 3 EXTREME - 4

*For acute and chronic health effects refer to the discussion in Section III

BE SAFE
READ OUR PRODUCT SAFETY INFORMATION ... AND PASS IT ON
(PRODUCT LIABILITY LAW REQUIRES IT)

SECTION 1 NAME

PRODUCT ▶	SHELL MINERAL SPIRITS 200 HT
CHEMICAL NAME ▶	SOLVENT NAPHTHA (PETROLEUM), MEDIUM ALIPHATIC
CHEMICAL FAMILY ▶	HYDROCARBON SOLVENT
SHELL CODE ▶	83014

SECTION II-A PRODUCT/INGREDIENT

NO.	COMPOSITION	CAS NUMBER	PERCENT
P	SHELL MINERAL SPIRITS 200 HT*	64742-88-7	100

*A COMPLEX COMBINATION OF PREDOMINANTLY C9-C12 HYDROCARBONS; EXACT COMPOSITION WILL VARY.

SECTION II-B ACUTE TOXICITY DATA

NO.	ACUTE ORAL LD50	ACUTE DERMAL LD50	ACUTE INHALATION LC50
**	>25 ML/KG (RAT)	>4 ML/KG (RABBIT)	>700 PPM/4H (RAT)

**BASED ON EITHER PRODUCT OR ESSENTIALLY SIMILAR PRODUCT TESTING.

SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

EYE CONTACT
LIQUID IS PRACTICALLY NONIRRITATING TO THE EYES.

SKIN CONTACT
LIQUID IS SLIGHTLY IRRITATING TO THE SKIN. PRLONGED OR REPEATED LIQUID CONTACT CAN RESULT IN DEFATTING AND DRYING OF THE SKIN WHICH MAY RESULT IN SKIN IRRITATION AND DERMATITIS.

INHALATION
VAPORS MAY CAUSE IRRITATION TO NOSE, THROAT, AND RESPIRATORY TRACT. HIGH VAPOR CONCENTRATIONS MAY RESULT IN CNS DEPRESSION.

INGESTION
INGESTION OF PRODUCT MAY RESULT IN VOMITING; ASPIRATION (BREATHING) OF VOMITUS INTO THE LUNGS MUST BE AVOIDED AS EVEN SMALL QUANTITIES MAY RESULT IN ASPIRATION PNEUMONITIS.

SIGNS AND SYMPTOMS
IRRITATION AS NOTED ABOVE. EARLY TO MODERATE CNS (CENTRAL NERVOUS SYSTEM) DEPRESSION MAY BE EVIDENCED BY GIDDINESS, HEADACHE, DIZZINESS AND NAUSEA; IN EXTREME CASES, UNCONSCIOUSNESS AND DEATH MAY OCCUR. ASPIRATION PNEUMONITIS MAY BE EVIDENCED BY COUGHING, LABORED BREATHING AND CYANOSIS

(BLUISH SKIN); IN SEVERE CASES DEATH MAY OCCUR.

AGGRAVATED MEDICAL CONDITIONS
PREEXISTING EYE, SKIN, AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE TO THIS PRODUCT.

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

	OSHA		ACGIH		OTHER
NO.	PEL/TWA	PEL/CEILING	TLV/TWA	TLV/STEL	
P*	100 PPM		100 PPM		

*RECOMMEND THAT LIMITS FOR STODDARD SOLVENT BE USED AS A GUIDE.

SECTION V EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT
FLUSH EYES WITH PLENTY OF WATER FOR 15 MINUTES WHILE HOLDING EYELIDS OPEN. GET MEDICAL ATTENTION.

SKIN CONTACT
REMOVE CONTAMINATED CLOTHING/SHOES. FLUSH SKIN WITH WATER. FOLLOW BY WASHING WITH SOAP AND WATER. IF IRRITATION OCCURS, GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING UNTIL CLEANED.

INHALATION
REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING.

INGESTION
DO NOT INDUCE VOMITING. IF VOMITING OCCURS SPONTANEOUSLY, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION OF LIQUID INTO THE LUNGS. GET MEDICAL ATTENTION.*

NOTE TO PHYSICIAN
*IF MORE THAN 2.0 ML PER KG HAS BEEN INGESTED AND VOMITING HAS NOT OCCURRED, EMESIS SHOULD BE INDUCED WITH SUPERVISION. KEEP VICTIM'S HEAD BELOW HIPS TO PREVENT ASPIRATION. IF SYMPTOMS SUCH AS LOSS OF GAG REFLEX, CONVULSIONS OR UNCONSCIOUSNESS OCCUR BEFORE EMESIS, GASTRIC LAVAGE USING A CUFFED ENDOTRACHAEL TUBE SHOULD BE CONSIDERED.

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

MALE RATS EXPOSED FOR 90 DAYS BY INHALATION TO VAPORS OF SIMILAR SOLVENTS SHOWED EVIDENCE OF KIDNEY DAMAGE. THE RELEVANCE OF THIS EFFECT TO MAN IS UNKNOWN. IN ONE OF THE STUDIES A LOW GRADE ANEMIA WAS ALSO OBSERVED.

SECTION VII PHYSICAL DATA

BOILING POINT: 324-402 (DEG F)	SPECIFIC GRAVITY: 0.78 (H2O=1)	VAPOR PRESSURE: <5 @ 100 DEG F (MM HG)
MELTING POINT: NOT AVAILABLE (DEG F)	SOLUBILITY: NEGLIGIBLE (IN WATER)	VAPOR DENSITY: 5.3 (AIR=1)

EVAPORATION RATE (N-BUTYL ACETATE = 1): 0.07

APPEARANCE AND ODOR:
LIGHT COLORED LIQUID. HYDROCARBON ODOR.

SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD:
111 DEG F (TCC)

FLAMMABLE LIMITS /% VOLUME IN AIR
LOWER: 1 UPPER: 7

EXTINGUISHING MEDIA
USE WATER FOG, FOAM, DRY CHEMICAL OR CO2. DO NOT USE A DIRECT STREAM OF WATER. PRODUCT WILL FLOAT AND CAN BE REIGNITED ON SURFACE OF WATER.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS
CAUTION. COMBUSTIBLE. DO NOT ENTER CONFINED FIRE SPACE WITHOUT FULL BUNKER GEAR (HELMET WITH FACE SHIELD, BUNKER COATS, GLOVES AND RUBBER BOOTS), INCLUDING A POSITIVE PRESSURE NIOSH APPROVED SELF-CONTAINED BREATHING APPARATUS. COOL FIRE EXPOSED CONTAINERS WITH WATER.

UNUSUAL FIRE AND EXPLOSION HAZARDS
CONTAINERS EXPOSED TO INTENSE HEAT FROM FIRES SHOULD BE COOLED WITH WATER TO PREVENT VAPOR PRESSURE BUILDUP WHICH COULD RESULT IN CONTAINER RUPTURE. CONTAINER AREAS EXPOSED TO DIRECT FLAME CONTACT SHOULD BE COOLED WITH LARGE QUANTITIES OF WATER AS NEEDED TO PREVENT WEAKENING OF CONTAINER STRUCTURE.

SECTION IX REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:
AVOID HEAT, FLAME AND CONTACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS
CARBON MONOXIDE AND UNIDENTIFIED ORGANIC COMPOUNDS MAY BE FORMED DURING COMBUSTION.

SECTION X EMPLOYEE PROTECTION

RESPIRATORY PROTECTION
AVOID PROLONGED OR REPEATED BREATHING OF VAPORS. IF EXPOSURE MAY OR DOES EXCEED OCCUPATIONAL EXPOSURE LIMITS (SEC. IV) USE A NIOSH-APPROVED RESPIRATOR TO PREVENT OVEREXPOSURE. IN ACCORD WITH 29 CFR 1910.134 USE EITHER AN ATMOSPHERE-SUPPLYING RESPIRATOR OR AN AIR-PURIFYING RESPIRATOR FOR ORGANIC VAPORS.

PROTECTIVE CLOTHING
AVOID CONTACT WITH EYES. WEAR SAFETY GLASSES OR GOGGLES AS APPROPRIATE. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WEAR CHEMICAL-RESISTANT GLOVES AND OTHER CLOTHING AS REQUIRED TO MINIMIZE CONTACT. TEST DATA FROM PUBLISHED LITERATURE AND/OR GLOVE AND CLOTHING MANUFACTURERS INDICATE THE*

ADDITIONAL PROTECTIVE MEASURES
*BEST PROTECTION IS PROVIDED BY NITRILE MATERIAL. USE EXPLOSION-PROOF VENTILATION AS REQUIRED TO CONTROL VAPOR CONCENTRATIONS. AIR-DRY CONTAMINATED CLOTHING IN A WELL VENTILATED AREA THEN LAUNDER BEFORE REUSING.

SECTION XI ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES
CAUTION. COMBUSTIBLE. *** LARGE SPILLS *** ELIMINATE POTENTIAL SOURCES OF IGNITION. WEAR APPROPRIATE RESPIRATOR AND OTHER PROTECTIVE CLOTHING. SHUT OFF SOURCE OF LEAK ONLY IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP

RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND, OR OTHER SUITABLE MATERIAL: PLACE IN NON-LEAKING CONTAINERS AND SEAL TIGHTLY FOR PROPER DISPOSAL. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE; DISPOSE OF FLUSH SOLUTION AS ABOVE. *** SMALL SPILLS *** TAKE UP WITH AN ABOSRBENT MATERIAL AND PLACE IN NON-LEAKING CONTAINERS FOR PROPER DISPOSAL.

SECTION XII SPECIAL PRECAUTIONS

KEEP LIQUID AND VAPOR AWAY FROM HEAT, SPARKS AND FLAME. SURFACES THAT ARE SUFFICIENTLY HOT MAY IGNITE EVEN LIQUID PRODUCT IN THE ABSENCE OF SPARKS OR FLAME. EXTINGUISH PILOT LIGHTS, CIGARETTES AND TURN OFF OTHER SOURCES OF IGNITION PRIOR TO USE AND UNTIL ALL VAPORS ARE GONE. VAPORS MAY ACCUMULATE AND TRAVEL TO IGNITION SOURCES DISTANT FROM THE HANDLING SITE; FLASH-FIRE CAN RESULT. KEEP CONTAINERS CLOSED WHEN NOT IN USE. USE WITH ADEQUATE VENTILATION.

CONTAINERS, EVEN THOSE THAT HAVE BEEN EMPTIED, CAN CONTAIN EXPLOSIVE VAPORS. DO NOT CUT, DRILL, GRIND, WELD OR PERFORM SIMILAR OPERATIONS ON OR NEAR CONTAINERS.

STATIC ELECTRICITY MAY ACCUMULATE AND CREATE A FIRE HAZARD. GROUND FIXED EQUIPMENT. BOND AND GROUND TRANSFER CONTAINERS AND EQUIPMENT.

SECTION XIII TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:
CLASS 3 (FLAMMABLE LIQUIDS), III

THE DOT INFORMATION IN THIS SECTION IS BASED UPON AN EVALUATION OF THE PRODUCT AGAINST THE REQUIREMENTS OF 49 CFR 172 AND 173 AS REVISED BY HM-181.

D.O.T. PROPER SHIPPING NAME:
PETROLEUM DISTILLATES, N.O.S.

OTHER REQUIREMENTS:
UN1268, GUIDE 27

SECTION XIV OTHER REGULATORY CONTROLS

THIS PRODUCT IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES

PROTECTION OF STRATOSPHERIC OZONE (PURSUANT TO SECTION 611 OF THE CLEAN AIR ACT AMENDMENTS OF 1990): PER 40 CFR PART 82, THIS PRODUCT DOES NOT CONTAIN NOR WAS IT DIRECTLY MANUFACTURED WITH ANY CLASS I OR CLASS II OZONE DEPLETING SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV STATE REGULATORY INFORMATION

THIS INFORMATION IS BEING SYSTEMATICALLY ADDED TO OUR MSDS. IT HAS PREVIOUSLY BEEN PROVIDED TO YOU IN VARIOUS WAYS, INCLUDING THE MSDS. THE NEW MSDS FORMAT IS INTENDED TO PROVIDE THE USER WITH THE INFORMATION IN A MORE CONVENIENT MANNER.

SECTION XVI SPECIAL NOTES

THIS MSDS REVISION HAS CHANGES IN SECTION XIII.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: JUNE 15, 1993

J. C. WILLETT

BE SAFE

READ OUR PRODUCT
SAFETY INFORMATION ...AND PASS IT ON
(PRODUCT LIABILITY LAW
REQUIRES IT)

SHELL OIL COMPANY
PRODUCT SAFETY AND COMPLIANCE
P. O. BOX 4320
HOUSTON, TX 77210

ENVIRONMENTAL DATA SHEET

EDS NUMBER ▶ 7,593-1 PAGE 1

97449 (9-87)

PRODUCT ▶	SHELL MINERAL SPIRITS 200 HT
PRODUCT CODE ▶	83014

SECTION I PRODUCT/COMPOSITION

NO.	COMPONENT	CAS NUMBER	PERCENT
P	SHELL MINERAL SPIRITS 200 HT*	64742-88-7	100

*A COMPLEX COMBINATION OF PREDOMINANTLY C9-C12 HYDROCARBONS; EXACT COMPOSITION WILL VARY.

SECTION II SARA TITLE III INFORMATION

NO.	EHS RQ (LBS) (*1)	EHS TPQ (LBS) (*2)	SEC 313 (*S)	313 CATEGORY (*4)	311/312 CATEGORIES (*5)
P					H-1, H-2, P-3

FOOTNOTES

*1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC.302
*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
*3 = TOXIC CHEMICAL, SEC 313
*4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.65 C), MUST BE USED ON TOXIC RELEASE INVENTORY FORM
*5 = HAZARD CATEGORY FOR SARA SEC. 311/312 REPORTING
HEALTH H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD H-2 = DELAYED (CHRONIC) HEALTH HAZARD
PHYSICAL P-3 = FIRE HAZARD P-4 = SUDDEN RELEASE OF PRESSURE HAZARD
P-5 = REACTIVE HAZARD

SECTION III ENVIRONMENTAL RELEASE INFORMATION

UNDER EPA-CWA, THIS PRODUCT IS CLASSIFIED AS AN OIL UNDER SECTION 311. SPILLS INTO OR LEADING TO SURFACE WATERS THAT CAUSE A SHEEN MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER, 800-424-8802.

SECTION IV RCRA INFORMATION

UNDER EPA - RCRA (40 CFR 261.21), IF THIS PRODUCT BECOMES A WASTE MATERIAL, IT WOULD BE IGNITABLE HAZARDOUS WASTE, HAZARDOUS WASTE NUMBER 0001. REFER TO LATEST EPA OR STATE REGULATIONS REGARDING PROPER DISPOSAL.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TD US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

DATE PREPARED: JUNE 13, 1989

SHELL OIL COMPANY
CORPORATE ENVIRONMENTAL AFFAIRS
P. O. BOX 4320
HOUSTON, TX 77210

FOR ADDITIONAL INFORMATION ON THIS ENVIRONMENTAL DATA PLEASE CALL
(713) 241-2252

FOR EMERGENCY ASSISTANCE PLEASE CALL
SHELL: (713) 473-9461
CHEMTREC: (800) 424-9300

MATERIAL SAFETY DATA SHEET

DATE PREPARED: 07/26/2005
MSDS No: T

TOLUENE

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: TOLUENE
PRODUCT CODE: T

MANUFACTURER

Distributed by Tarr, LLC
P.O. Box 12570
Portland, OR 97212
Customer Service: 503-288-5294

24 HR. EMERGENCY TELEPHONE NUMBERS

CHEMTREC (US Transportation) :(800) 424 - 9300
CANUTEC (Canadian Transportation) :(613) 996 - 6666

2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS#
Toluene	100	000108-88-3
Benzene	< 0.1	71-43-2

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

		EXPOSURE LIMITS					
Chemical Name		OSHA PEL		ACGIH TLV		Supplier	
		ppm	mg/m^3	ppm	mg/m^3	ppm	mg/m^3
Toluene	TWA	200a		50	188		
	STEL	a[1]					
Benzene	TWA	1 %[2]		5 %			

OSHA TABLE COMMENTS:
1. (10-min max peak)
2. Carcinogen

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: WARNING! Flammable liquid and vapor. Harmful or fatal if swallowed. Vapor hannful. May cause central nervous system depression. May be irritating to eyes and skin.

POTENTIAL HEALTH EFFECTS

EYES: Liquid is moderately irritating to the eyes. High vapor concentrations may also be irritating. Direct contact with the liquid or exposure to its vapors or mists may cause stinging, tearing, redness.

SKIN: Liquid is mildly irritating to the skin. Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INGESTION: Liquid is moderately toxic and may be harmful if swallowed; may product CNS depression. Ingestion of product may result in vomiting; aspiration (breathing) of vomitus into the lungs must be avoided as even small quantities may result in aspiration pneumonitis.

INHALATION: High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).

ACUTE EFFECTS: Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness, and nausea; in extreme cases, unconsciousness and death may occur. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis. In severe cases death may result.

MEDICAL CONDITIONS AGGRAVATED: Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Impaired function from preexisting disorders may be aggravated by exposure to this product.

4. FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention, if irritation occurs or persists.

SKIN: Remove contaminated clothing/shoes. Flush skin with water. Follow by washing with soap and water. If irritation occurs, get medical attention. Do not reuse clothing until cleaned.

INGESTION: DO NOT INDUCE VOMITING. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Get medical attention.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or if breathing is difficult, oxygen should be administered by qualified personnel. Seek immediate medical attention.

NOTES TO PHYSICIAN: If more than 2.0 ml per kg has been ingested and vomiting has not occurred, emesis should be induced with supervision. Keep victim's head below hips to prevent aspiration.

5. FIRE FIGHTING MEASURES

FLASHPOINT AND METHOD: (40°F)TAG CC

FLAMMABLE LIMITS: 0.01 to 0.071

AUTOIGNITION TEMPERATURE: (896°F)

EXTINGUISHING MEDIA: Use water fog, "alcohol" foam, dry chemical, or CO2.

HAZARDOUS COMBUSTION PRODUCTS: Carbon monoxide and unidentified organic compounds may be formed during combustion.

EXPLOSION HAZARDS: When heated above the flash point, this material emits flammable vapors which, when mixed with air, can burn or be explosive. Fine mists or sprays may be flammable at temperatures below the flash point.

FIRE FIGHTING PROCEDURES: WARNING! Flammable Liquid. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear, including a positive pressure NIOSH approved SCBA. Cool fire exposed containers with water.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES: WARNING. Flammable. Ventilate area of leak or spill. Remove all sources of ignition. Clean-up personnel require protective clothing and respiratory protection from vapors. Only specially trained or qualified personnel should handle the emergency.

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Keep away from heat, sparks, and flame. Surfaces that are hot may ignite even liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors are gone.

COMMENTS: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide exhaust ventilation sufficient to keep the airborne concentration of this product below its exposure limits. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination.

PERSONAL PROTECTION

EYES AND FACE: Chemical splash goggles and face shield in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. (Consult your industrial hygienist.)

SKIN: Wear chemical resistant gloves such as: Poly Vinyl Alcohol (PVA), Viton, or Teflon gloves or consult your safety equipment supplier. Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. The equipment must be cleaned thoroughly after each use.

RESPIRATORY: If exposure may or does exceed occupational exposure limits (Sec. 2) use a NIOSH approved respirator to prevent overexposure. In accord with 29 CFR 1910.134 use either an atmosphere-suppling respir. of an air-purifying respir. for organic vapors.

PROTECTIVE CLOTHING: Where splashing is possible, full chemically resistant protective clothing (e.g., acid suit) and boots are required.

WORK HYGIENIC PRACTICES: Use good personal hygiene when handling this product. Wash hands after use, before eating, drinking, smoking, or using the toilet.

OTHER USE PRECAUTIONS: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: Liquid
ODOR: Pungent odor.
APPEARANCE: Colorless, mobile liquid.
COLOR: Clear, colorless liquid.
pH: Essentially neutral.

PERCENT VOLATILE: 100
VAPOR PRESSURE: 22
VAPOR DENSITY: 3.14 (Air=1)
BOILING POINT: to (232°F)
FREEZING POINT: NDA = no data available.
MELTING POINT: (-139.°F)
SOLUBILITY IN WATER: Soluble in alcohol, benzene, and ether; negligible in water.
EVAPORATION RATE: Slower than ether.
DENSITY: 7.276
SPECIFIC GRAVITY: 0.869 to 0.873
MOLECULAR WEIGHT: 92.11
(VOC): 7.276 lbs./gal.
(VOC) NOTES: Toluene at 871.9666 g/l.

10. STABILITY AND REACTIVITY

STABLE: YES

HAZARDOUS POLYMERIZATION: NO

STABILITY: Stable under normal conditions.

POLYMERIZATION: Avoid heat, flame, and other sources of ignition.

HAZARDOUS DECOMPOSITION: Carbon monoxide and unidentified organic compounds may be formed during combustion.

INCOMPATIBLE MATERIALS: Strong oxidizers.

11. TOXICOLOGICAL INFORMATION

ACUTE

DERMAL LD_{50}: > 14000 mg/kg (rabbit)
LD50 is for Benzene. This product may contain benzene (CAS 71-43-2) at a concentration less than 300 ppm.

ORAL LD_{50}: 636 mg/kg (rat)
LD50 for Benzene is 5,000 mg/kg (rat). This product may contain benzene (CAS 71-43-2) at a concentration less than 300 ppm.

INHALATION LC_{50}: ~ 4000 (NINHL rat)

LC50 is for Benzene. This product may contain benzene (CAS 71-43-2) at a concentration less than 300 ppm.

SENSITIZATION: While there is no evidence that industrially acceptable levels of toluene vapors (e.g., the TLV) have produced cardiac effects in humans, animal studies have shown that inhalation of high levels of toluene produced cardiac sensitization. Such sensitization may cause fatal changes in heart rhythms. This latter effect was shown to be enhanced by hypoxia or the injection of adrenalinlike agents. Prolonged and repeated exposures to high concentrations of toluene have resulted in hearing loss in laboratory rats. While the effect of solvents on the human auditory system is uncertain, solvent abusers exposed to high doses of toluene show signs of hearing loss, and occupational exposure to toluene may interact with noise in causing hearing loss in the work environment. The effects of solvents on human hearing are uncertain. Solvent abusers and noise interaction with toluene in the work environment may cause signs of hearing loss.

CARCINOGENICITY:

CARCINOGENICITY COMMENTS:

Toluene is not known to be mutagenic or carcinogenic. However, the available human and experimental data are limited and insufficient to assess carcinogenic potential. Toluene is not listed as a carcinogen by NTP, IARC, or OSHA. Intentional abuse of toluene vapors has been linked to damage of brain, liver, kidney and to death. Many case studies involving abuse during pregnancy clearly indicate that toluene is a developmental toxicant. Developmental toxic effects comparable to those observed in humans have been seen in lab animals but the effects were generally associated with maternal toxicity.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill response plan should be developed and implemented.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: The preferred options for disposal are to send to licensed reclaimers, or to permitted incinerators. Any disposal practice must be in compliance with federal, state, and local regulations. Do not dump into sewers, ground, or any body of water.

EMPTY CONTAINER: KEEP OUT OF REACH OF CHILDREN! Empty containers retain product residue and can be dangerous. Do not pressurize, cut weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks static electricity, or other sources of ignition.

RCRA/EPA WASTE INFORMATION: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.
US EPA guidelines for the classification determination are listed in 40 CFR.
Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)
PROPER SHIPPING NAME: Toluene
PRIMARY HAZARD CLASS/DIVISION: 3
UN/NA NUMBER: UN 1294
PACKING GROUP: II

REPORTABLE QUANTITY (RQ) UNDER CERCLA: 1000 lbs

LABEL: Flammable liquid
NAERG: 130

15. REGULATORY INFORMATION

UNITED STATES
SARA TITLE HI (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

FIRE: YES **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** YES

311/312 HAZARD CATEGORIES: This product should be reported as an immediate (acute) health hazard, delayed (chronic) health hazard, and a fire hazard.

313 REPORTABLE INGREDIENTS: Toluene (CAS 108-88-3 and benzene (CAS 71-43-2)

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA RQ: 1,000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

CALIFORNIA PROPOSITION 65: The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following chemicals known to the State of California to cause cancer and reproductive toxicity: Benzene, Toluene

16. OTHER INFORMATION

REASON FOR ISSUE: Updated to new MSDS format.

APPROVAL DATE: 07/26/2005

PREPARED BY: P. Rodabaugh

REVISION SUMMARY New MSDS

HMIS CODES

FLAMMABILITY: 3 **HEALTH:** 2 **PHYSICAL HAZARD:** 0 **PERSONAL PROTECTION:** G

ADDITIONAL MSDS INFORMATION: Last revision 1/25/2005.

MANUFACTURER DISCLAIMER: The information contained herein is based on the data available to us and is believed to be accurate. However, Tarr Acquisition, LLC (Tarr, LLC) makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof Tarr, LLC assumes no responsibility for injuries from the use of the product described herein.

MATERIAL SAFETY DATA SHEET: UPPER HAND

Section I - General Information

( )-000000- - 4124)
Issue:
/18/2004 12:00:00 AM
hemical Name & Synonyms:
/A
hemical Family:
ETROLEUM EMULSION
anufacturer Name:
HEMSEARCH DIV. OF NCH CORP.
anufacturer Address:
OX 152170
RVING, TX 75015
ropared By:
Boynton/Chemist

Supercedes:
6/10/2004 12:00:00 AM
Trade Name & Synonyms:
UPPER HAND
Formula is a mixture: [√]

Product Code Number:
4124

Emergency Phone Number:
800-424-9300

Section II - Hazardous Ingredients

THE HAZARDS PRESENTED BELOW ARE THOSE OF THE INDIVIDUAL COMPONENTS

hemical Name (Ingredients)	Hazard	TLV	PEL	STEL	CAS #
YNTHETIC ISOPARAFFINIC HYDROCARBON	IRRITANT	5 MG/M3 $I	5 MG/H3 $2	10MG/M3 $I	64742-47-8
HITE MINERAL OIL	IRRITANT	5 MG/M3 $I	5 MG/M3 $2	10MG/M3 $I	S$
DLYETHYLENE HOMOPOLYMER OIL MIST	IRRITANT	N/E 1	N/E 2	N/E	9002-88-4
S 8042-47-5, 72623-87-1, 64742-55-6					

Section III - Physical Data

Boiling Point (°F): >200°
Vapor Pressure (mm Hg): 15.5
Vapor Density (Air=1): 0.6
pH @ 100% : 8.6
% Volatile by Volumo: 86
H_2O Solubility: APPRECIABLE

Specific Gravity (H_2O=1): 0.86
Color: MUSTARD YELLOW
Odor: SEASHORE
Clarity: OPAQUE
Evaporation Rate (BuAc=1): 0.3
Viscosity: VISCOUS

Section IV - Fire and Explosion Hazard

Flash Point: >200°F
Flammable Limits: PETROLEUM DISTILLATE
LEL: 0.5%

Method Used: SETA-FLASH
UEL: 4.9%
Aerosol Level (NFPA 30B): N/A

Extinguishing Media:

[√] Foam	[√] Alcohol Foam	[√] CO2
[√] Dry Chemical	[√] Water Spray	[ ] Other

NFPA 704 Hazard Rating:

4-Extreme
3-High
2-Moderate
1-Slight
0-Insignificant

Health: 1
Flammability: 1
Instability: 0
Special:

pecial Fire Fighting Procedures:
IREFIGHTERS SHOULD WEAR A SELF-CONTAINED BREATHING APPARATUS AHD FULL PROTECTIVE GEAR. COOL FIRE-EXPOSED CONTAINERS WITH WATER SPRAY TO PREVENT BURSTING.

nusual Fire and Explosion Hazards:
HE USE OF WATER SPRAY (FOG) WHILE EFFECTIVE, MAY CAUSE FROTHING AND FOAMING. NEVER USE A WATER JET AS THIS WILL JUST SPREAD THE FIRE. USE CARE AS SPILLS MAY E SLIPPERY.

Section V - Health and Hazard Data

hreshold Limit Value:
5 MG/M3 AS OIL MIST 1.

ffects of Overexposure:

cute: (Short Term Exposure)
YE CONTACT: CAUSES IRRITATION SEEN AS STINGING, TEARING, AND REDNESS. SKIN CONTACT: MAY CAUSE IRRITATION SEEN AS ITCHING AND REDNESS IN SENSITIVE NDIVIDUALS. PROLONGED OR REPEATED CONTACT MAY CAUSE DRYING AND CHAPPING OF THE SKIN. INHALATION: MAY CAUSE RESPIRATORY IRRITATION SEEN AS COUGHING AND NEEZING. AT LOW VAPOR CONCENTRATIONS, NO HARMFUL EFFECTS ARE EXPECTED. AT HIGH VAPOR CONCENTRATIONS AND AT ELEVATED TEMPERATURES, INHALATION MAY CAUSE ENTRAL NERVOUS SYSTEM EFFECTS SUCH AS HEADACHE, DIZZINESS, DROWSINESS, WEAKNESS, UNCONCIOUSNESS, POSSIBLE ANESTHETIC EFFECTS FROM CENTRAL NERVOUS SYSTEM EPRESSION, AND MAY BE FATAL. INGESTION: HAY CAUSE IRRITATION WITH POSSIBLE NAUSEA, VOMITING, AND DIARRHEA.

hronic: (Long Term Exposure)
N RARE OCCASIONS, PROLONGED AHD REPEATED EXPOSURE TO HYDROCARBON MIST POSES A RISK OF CHRONIC LUNG INFLAMMATION. THIS CONDITION IS USUALLY ASYMPTOMATIC AS A ESULT OF REPEATED SHALL ASPIRATIONS. SHORTNESS OF BREATH AND COUGHING ARE THE HOST COMMON SYHPTOMS. ASPIRATION MAY LEAD TO PULMONARY EDEMA AND HEMORRHAGE ND HAY BE FATAL. SIGNS OF LUNG INVOLVEHENT INCLUDE INCREASED RESPIRATION AND HEART RATES AS WELL AS A BLUISH DISCOLORATION OF THE SKIN. CHRONIC SKIN CONTACT AY PROMOTE DERMATITIS AND OIL ACNE. IN RARER CASES, AN INCREASED SENSTIVITY TO SUNLIGHT (PHOTOSENSITIVITY) MAY OCCUR. MEDICAL CONDITIONS AGGRAVATED BY XPOSURE ARE PRE-EXISTING RESPIRATORY AND SKIN CONDITIONS SUCH AS ASTHMA, EMPHYSEMA, AND DERMATITIS. TARGET ORGANS: CENTRAL NERVOUS SYSTEM. THE PRIMARY OUTES OF EXPOSURE ARE SKIN AND EYE CONTACT.

Primary Routes of Encry

[√] Inhalation	[ ] Ingestion	[ ] Absorption

ancy First Aid Procedures:

nhalation:
EMOVE FROM THE AREA TO FRESH AIR. SEEK MEDICAL ATTENTION IF RESPIRATORY IRRITATION DEVELOPS OR IF BREATHING BECOMES DIFFICULT.

ye Contact:
INSE THE EYES WITH WATER. REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING WITH PLENTY OF WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION

DEVELOPS.

Skin Contact:
WASH AFFECTED AREAS WITH PLENTY OF SOAP AND WATER FOR SEVERAL MINUTES. SEEK MEDICAL ATTENTION IF IRRITATION DEVELOPS.

tion:
3 TO 4 GLASSES OF WATER, BUT DO NOT INDUCE VOMITING. IF VOMITING OCCURS, GIVE FLUIDS AGAIN. SEEK MEDICAL ATTENTION IF DISCOMFORT OCCURS.

Notes to Physician:
THERE IS NO SPECIFIC ANTIDOTE. TREAT THE PATIENT SYMPTOMATICALLY.

Section VI - Toxicity Information

Product Contains Chemicals Listed as Carcinogen or Potential Carcinogen By:

[ ] IARC [ ] NTP [ ] OSHA [ ] ACGIH [ ] Other

TOTAL VOC CONTENT: 41.2% BY WEIGHT. 46.5% BY VOLUME. 355.6 G/L
VOC CONTENT (WITH LOW VAPOR PRESSURE EXEMPTION): 0.7% BY WEIGHT, 0.6% BY VOLUME. 5.9 G/L

SYNTHETIC ISOPARAFFINIC HYDROCARBON
IHL-RAT LC50: >290 PPM 3.
ORL-RAT LD50: >10 G/KG 3.
SKN-RBT LD50: >3 G/KG 3.
SKN SENSITIZER: NO 3.
SKN IRRITATION: SLIGHT 3.
EYE IRRITATION: SLIGHT 3.

THIS HYDROCARBON WAS ADMINISTERED ORALLY 5 DAYS/WEEK TO MALE AND FEMALE RATS AT 100, 500, AND 1000 MG/KG FOR 13 WEEKS. AN ADDITIONAL GROUP WAS DOSED WITH 100 MG/KG FOR 13 WEEKS FOLLOWED BY A 4-WEEK RECOVERY PERIOD. NO MORTALITIES OR CLINICAL EFFECTS WERE OBSERVED. LIVER AND KIDNEY WEIGHTS FOR THE 500 AND 1000 MG/KG EXPOSURE GROUPS WERE SIGNIFICANTLY INCREASED. AFTER THE 4-WEEK RECOVERY PERIOD, THERE WERE NO DIFFERENCES IN ORGAN WEIGHTS. 3.

WHITE MINERAL OIL
ORL-RAT LD50: > 5000 MG/KG 3.
SKN-RBT LD50: > 2000 MG/KG 3.
EYE-RBT SDT: NON-IRRITATING 3.
SKN-RBT SDT: NON-IRRITATING 3.
BUEHLER GUINEA PIG SENSITIZATION TEST: NON-SENSITIZING 3.
SKN-RBT SUB-CHRONIC: 28-DAY NON-IRRITATING 3.
SKN-HSE CHRONIC: 104-WEEK NO SKIN TUMORS AT SITE OF APPLICATION 3.

LIFETIME MOUSE SKIN PAINTING STUDIES INDICATED THAT THIS PRODUCT IS NOT MUTAGENIC OR CARCINOGENIC. 3.

MINERAL OIL MISTS DERIVED FROM HIGHLY REFINED OILS ARE REPORTED TO HAVE LOW ACUTE AND SUB-ACUTE TOXICITIES IN ANIMALS. EFFECTS FROM SINGLE AND SHORT-TERM REPEATED EXPOSURES TO HIGH CONCENTRATIONS WELL ABOVE APPLICABLE WORKPLACE EXPOSURE LEVELS INCLUDE LUNG INFLAMMATORY REACTION, LIPOID GRANULOMA FORMATION, AND LIPOID PNEUMONIA. IN ACUTE AND SUB-ACUTE STUDIES INVOLVING EXPOSURES TO LOWER CONCENTRATIONS AT OR NEAR CURRENT WORK PLACE EXPOSURE LEVELS PRODUCED NO SIGNIFICANT TOXICOLOGICAL EFFECTS. IN LONG TERM STUDIES (UP TO TWO YEARS) NO CARCINOGENIC EFFECTS HAVE BEEN REPORTED IN ANY ANIMAL SPECIES TESTED. THESE PETROLEUM DISTILLATES ARE SEVERELY HYDROTREATED. SEVERELY SOLVENT EXTRACTED, AND/OR PROCESSED BY MILD HYDROTREATMENT AND EXTRACTION. FOR THIS REASON, THEY ARE NOT CLASSIFIED AS CANCER HAZARDS. 3.

POLYETHYLENE HOMOPOLYMER
IHL-HOUSE LCSO: 12 GM/MG/30M 3.

INHALING POLYETHYLENE DUST DEVELOPED MILD INFLAMMATORY CHANGES IN THE LUNGS. PROLONGED INHALATION OF THERMAL DEGRADATION PRODUCTS FROM POLYETHYLENE NEUROLOGICAL EFFECTS IN RATS. 3.

ANIMAL STUDIES SHOWED NO ADVERSE HEALTH EFFECTS ON THE DIGESTIVE SYSTEM WHEN FED UP TO 20% POLYETHYLENE. 3.

SUBCHRONIC, 50 TO 90 DAY, FEEDING STUDIES CONDUCTED ON RATS, DOGS, AND SWINE SHOWED NO EFFECTS FROM DIETARY LEVELS OF 1 TO 20% POWDERED AND SHREDDED POLYETHYLENE. IARC HAS LISTED POLYETHYLENE AS A GROUP 3 SUBSTANCE. 3.

Section VII - Reactivity Data

Stability

[√] Stable [ ] Unstable

Conditions to Avoid:
AVOID HEAT, HOT SURFACES, SPARKS, AND OPEN FLAMES; DIRECT SUNLIGHT OR ULTRAVIOLET LIGHT.

Hazardous Polymerization

[√] Will not occur [ ] May occur

Conditions to Avoid:
N/A

Incompatibility (Materials to Avoid):
STRONG OXIDIZING AGENTS SUCH AS CHLORINE BLEACH AND CONCENTRATED HYDROGEN PEROXIDE; STRONG ALKALIES. FUMING NITRIC ACID.

Hazardous Decomposition Products:
OXIDES OF CARBON, OLEFINIC AND PARAFFINIC COMPOUNDS, ORGANIC ACIDS, KETONES, ALDEHYDES, ALCOHOLS, ISOPROPANOL.

Section VIII - Spill Or Leak Procedures

Steps to be Taken if Material is Released or Spilled:
WEAR APPROPRIATE PROTECTIVE CLOTHING. USE CARE AS SPILLS MAY BE SLIPPERY. SHUT OFF SOURCE OF LEAK. DIKE AND CONTAIN SPILL. ABSORB WITH AN INERT MATERIAL AND TRANSFER ALL MATERIAL INTO A PROPERLY LABELED CONTAINER FOR DISPOSAL. PREVENT PRODUCT FROM CONTAMINATING SOIL OR FROM ENTERING SEWAGE AND DRAINAGE SYSTEMS AND BODIES OF WATER. FLUSH AREA WITH WATER.

Waste Disposal Method(s):
DISPOSE OF IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS.

Neutralizing Agent:
N/A

Section IX - Special Protection Information

ed Ventilation:
GENERAL VENTILATION IS NORMALLY ADEQUATE. LOCAL VENTILATION IS RECOMMENDED TO CONTROL EXPOSURE FROM OPERATIONS THAT CAN GENERATE EXCESSIVE LEVELS OF VAPORS OR MISTS. LOCAL VENTILATION IS PREFERRED, BECAUSE IT PREVENTS DISPERSION INTO WORK AREAS BY CONTROLLING IT AT ITS SOURCE.

espiratory Protection:
ESPIRATORS SHOULD BE SELECTED BY AND USED UNDER THE DIRECTION OF A TRAINED HEALTH AND SAFETY PROFESSIONAL FOLLOWING REQUIREMENTS FOUND IN OSHA'S RESPIRATOR TANDARD (29 CFR 1910.134) AND ANSI'S STANDARD FOR RESPIRATORY PROTECTION (ZBB.2-1992). FOR CONCENTRATIONS ABOVE THE TLV AND/OR PEL BUT LESS THAN 10 TIMES HESE LIMITS, A NIOSH APPROVED HALF-FACEPIECE RESPIRATOR EQUIPPED WITH APPROPRIATE CHEMICAL CARTRIDGES HAY BE USED. FOR CONCENTRATIONS GREATER THAN 10 TIMES HE TLV AND/OR PEL, CONSULT THE NIOSH RESPIRATOR DECISION LOGIC FOUND IN PUBLICATION NO. 87-116 OR ANSI 280.2-1992.

Glove Protection:

NEOPRENE OR NITRILE RUBBER GLOVES IF REPEATED OR PROLONGED SKIN CONTACT IS LIKELY. ENSURE COMPLIANCE WITH OSHA'S PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD FOR HAND PROTECTION. 29 CFR 1910.138.

Eye Protection:

SAFETY GLASSES WITH SIDE SHIELDS IF THE METHOD OF APPLICATION PRESENTS THE LIKELIHOOD OF EYE CONTACT. ENSURE COMPLIANCE WITH OSHA'S PERSONAL PROTECTIVE EQUIPMENT (PPE) STANDARD FOR EYE AND FACE PROTECTION. 29 CFR 1910.133.

Other Protection:

WEAR GENERAL-DUTY WORK CLOTHES AND SHOES. REMOVE OIL SOAKED CLOTHING AND SHOES. WASH CLOTHING AND CLEAN SHOES BEFORE REUSE. A SAFETY SHOWER AND AN EYEWASH STATION SHOULD BE AVAILABLE.

Section X - Storage and Handling Information

Storage Temperature	
Max: 100°F	Min: 35°F

Storage Conditions			
[√] Indoors	[ ] Outdoors	[ ] Heated	[ ] Refrigerated

Precautions to be Taken in Handling and Storing:

ALWAYS STORE MATERIAL IN ITS ORIGINAL CONTAINER, OUT OF DIRECT SUNLIGHT. KEEP CONTAINER TIGHTLY CLOSED WHEN NOT IN USE. KEEP FROM FREEZING. IF PRODUCT FREEZES ALLOW IT TO SLOWLY WARM TO ROOM TEMPERATURE AND STIR THOROUGHLY BEFORE USING.

Other Precautions:

KEEP OUT OF REACH OF CHILDREN. READ THE ENTIRE LABEL BEFORE USING THE PRODUCT. FOLLOW THE LABEL DIRECTIONS. TRACES OF FREE ETHYLENE OXIDE NAY BE PRESENT IN THIS PRODUCT AND COULD ACCUMULATE IN THE HEADSPACE OF STORAGE AND TRANSPORT VESSELS.

Section XI - Regulatory Information

Chemical Name	CAS Number	Upper % Limit
None.		

Those Ingredients listed above are subject to the reporting requirements of 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Please call 1-800-527-9919 for additional information if you are a California customer. This MSDS is not intended for users in the state of California.

Section XII - References

1. THRESHOLD LIMIT VALUES FOR CHEHICAL SUBSTANCES AND PHYSICAL AGENTS AND BIOLOGICAL EXPOSURE INDICES, ACGIH, 2004. 2. OSHA PEL. 3. VENDOR'S MSDS. 4. REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES, CCINFOWeb, 2004. ALL THE COMPONENTS OF THIS PRODUCT ARE IN COMPLIANCE WITH THE TOXIC SUBSTANCES CONTROL ACT (TSCA) AND ARE EITHER LISTED ON THE TSCA INVENTORY OR OTHERWISE EXEMPTED FROM LISTING. - IRR:IRRITANT, FLAM/FLANM:FLAMMABLE, COMB:COMBUSTIBLE, CORR:CORROSIVE CARC:CARCINOGENIC. TOX:TOXIC, N/A:NOT APPLICABLE. N/E:NOT ESTABLISHED, COC:CLEVELAND OPEN CUP, PMCC:PENSKY-MARTIN CLOSED CUP, TCC:TAGLIABUE CLOSED CUP, LEL:LOWER EXPLOSION LIMIT, UEL:UPPER EXPLOSION LIMIT. NFPA:NATIONAL FIRE PROTECTION ASSOCIATION, IARC:INTERNATIONAL AGENCY FOR THE RESEARCH ON CANCER. NTP:NATIONAL TOXICOLOGY PROGRAM. OSHA:OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION, ACGIH:AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS, TLV:THRESHOLD LIMIT VALUE, PEL:PERMISSIBLE EXPOSURE LIMIT, STEL:SHORT-TERM EXPOSURE LIMIT, MLD:MILD, MOD:MODERATE, SEV:SEVERE, MUT:MUTAGENIC, ASPHX:ASPHYXIANT, PNOS:PARTICLES (INSOLUBLE) NOT OTHERWISE SPECIFIED, SDT:STANDARD DRAIZE TEST, ORL:ORAL, IHL:INHALATION, HMN:HUMAN

INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED ACCURATE IN LIGHT OF CURRENT FORMULATION. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THE DATA OR THE RESULTS TO EE OBTAINED FROM THE UEE THEREOF.

CHEMSEARCH DIV. OF NCH CORP. assumes no responsibility for personal injury or property damage caused by the use, storage, or disposal of the product in a manner not recommended on the oroduct label. Users assume all risks associated with such unrecommended use, storage, or disposal of the oroduct.

ITEM: 5A283 - LUBRICANT WD 40 1 G

PICK_REQ: 1114387763 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A6186**

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A6186

Associated Grainger Item: 5A283 - LUBRICANT WD 40 1 G

WD-40(R*)
MATERIAL SAFETY DATA SHEET

NFPA:
HEALTH 2
FIRE 2
REACTIVITY 0
SPECIAL 0

I. PRODUCT IDENTIFICATION

MANUFACTURER: WD-40 COMPANY
ADDRESS: 1061 CUDAHY PLACE (92110)
P.O. BOX 80607
SAN DIEGO, CALIFORNIA 92138-0607

TELEPHONE:
EMERGENCY ONLY: 1-(800) 424-9300 (CHEMTREC)
INFORMATION: (619) 275-1400

CHEMICAL NAME: ORGANIC MIXTURE

TRADE NAME: WD-40 BULK LIQUID

II. HAZARDOUS INGREDIENTS

CHEMICAL NAME	CAS NUMBER	%	EXPOSURE LIMIT ACGIH/OSHA
ALIPHATIC PETROLEUM DISTILLATES	8052-41-3	45-50	100 PPM PEL
PETROLEUM BASE OIL	64742-65-0	30-35	5 MG/M3 TWA (MIST)
LVP HYDROCARBON FLUID	64742-47-8	12-18	1200 MG/M3 TWA
NON-HAZARDOUS INGREDIENTS		<10	

III. PHYSICAL DATA

BOILING POINT: 323 DEG. F (MINIMUM)

EVAPORATION RATE: NOT DETERMINED

VAPOR DENSITY (AIR=1): GREATER THAN 1

VAPOR PRESSURE: NOT DETERMINED

SOLUBILITY IN WATER: INSOLUBLE

APPEARANCE: CLOUDY LIGHT AMBER

SPECIFIC GRAVITY (H2O=1): 0.832 @ 72 DEG. F

ODOR: CHARACTERISTIC ODOR

PERCENT VOLATILE (VOLUME): 74%

VOC: 412 GRAMS/LITER (49.5%)

IV. FIRE AND EXPLOSION

FLASH POINT: 131 DEG. F TAG CLOSED CUP

FLAMMABLE LIMITS: (SOLVENT PORTION)
(LEL): 1.0%
(UEL): 6.0%

EXTINGUISHING MEDIA: CO2, DRY CHEMICAL, FOAM.

SPECIAL FIRE FIGHTING PROCEDURES: NONE

UNUSUAL FIRE AND EXPLOSION HAZARDS: NONE

V. HEALTH HAZARD/PRECAUTIONS OF ENTRY

THRESHOLD LIMIT VALUE:
ALIPHATIC PETROLEUM DISTILLATES (SOLVENT) LOWEST TLV (ACGIH 100 PPM.)

SYMPTOMS OF OVEREXPOSURE:

INHALATION (BREATHING):
MAY CAUSE ANESTHESIA, HEADACHE, DIZZINESS, NAUSEA AND UPPER RESPIRATORY IRRITATION.

SKIN CONTACT: MAY CAUSE DRYING OF SKIN AND/OR IRRITATION.

EYE CONTACT: MAY CAUSE IRRITATION, TEARING AND REDNESS.

INGESTION (SWALLOWED): MAY CAUSED IRRITATION, NAUSEA, VOMITING AND DIARRHEA.

FIRST AID EMERGENCY PROCEDURES:

INGESTION (SWALLOWED): DO NOT INDUCE VOMITING, SEEK MEDICAL ATTENTION.

EYE CONTACT:
IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR 15 MINUTES.

SKIN CONTACT: WASH WITH SOAP AND WATER.

INHALATION (BREATHING):
REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NECESSARY.
IF BREATHING IS DIFFICULT, GIVE OXYGEN.

PRE-EXISTING MEDICAL CONDITIONS SUCH AS EYE, SKIN AND RESPIRATORY DISORDERS MAY BE AGGRAVATED BY EXPOSURE.

DANGER!

ASPIRATION HAZARD:
IF SWALLOWED, CAN ENTER LUNGS AND MAY CAUSE CHEMICAL PNEUMONITIS. DO NOT INDUCE VOMITING. CALL PHYSICIAN IMMEDIATELY.

SUSPECTED CANCER AGENT:
YES ( )
NO (X)
THE COMPONENTS IN THIS MIXTURE HAVE BEEN FOUND TO BE NONCARCINOGENIC BY NTP, IARC AND OSHA

VI. REACTIVITY DATA

STABILITY:
STABLE (X)
UNSTABLE ( )
CONDITIONS TO AVOID: HEAT AND OPEN FLAME.

INCOMPATIBILITY: STRONG OXIDIZING AGENTS

HAZARDOUS DECOMPOSITION PRODUCTS:
THERMAL DECOMPOSITION MAY YIELD CARBON MONOXIDE AND/OR CARBON DIOXIDE.

HAZARDOUS POLYMERIZATION:
MAY OCCUR ( )
WILL NOT OCCUR (X)

VII. SPILL OR LEAK PROCEDURES

SPILL RESPONSE PROCEDURES:
ABSORB SMALL QUANTITIES WITH SAND, EARTH, SAWDUST. LARGE QUANTITIES PUMP INTO TANK.

WASTE DISPOSAL METHOD:
INCINERATED LIQUID, BURY SATURATED ABSORBENT IN LAND FILL. DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION: SUFFICIENT TO KEEP SOLVENT VAPOR LESS THAN TLV.

RESPIRATORY PROTECTION: ADVISED WHEN CONCENTRATIONS EXCEED TLV.

PROTECTIVE GLOVES: ADVISED TO PREVENT POSSIBLE SKIN IRRITATION.

EYE PROTECTION:
APPROVED EYE PROTECTIONS TO SAFEGUARD AGAINST POTENTIAL EYE CONTACT, IRRITATION OR INJURY.

OTHER PROTECTIVE EQUIPMENT: NONE REQUIRED.

IX. SPECIAL PRECAUTIONS

KEEP FROM OPEN FLAME, DO NOT TAKE INTERNALLY. AVOID EXCESSIVE INHALATION OF SPRAY PARTICLES. KEEP FROM CHILDREN.

X. TRANSPORTATION DATA

(49 CFR 172.101)

DOMESTIC SURFACE:

DESCRIPTION: WD-40 BULK LUBRICANT

HAZARD CLASS: NON-REGULATED PER 49 CFR 173.150 (F)(2)

ID NO: NONE

LABEL REQUIRED: NONE (UNDER 119 GALLONS)

XI. REGULATORY INFORMATION

ALL INGREDIENTS FOR THIS PRODUCT ARE LISTED ON THE TSCA INVENTORY.

SARA TITLE III CHEMICALS: NONE

CALIFORNIA PROP 65 CHEMICALS: NONE

CERCLA REPORTABLE QUANTITY: NONE

RCRA HAZARDOUS WASTE NO: D001 (IGNITABLE)

SIGNATURE: R. MILES
TITLE: TECHNICAL DIRECTOR

REVISION DATE: NOVEMBER 2003
SUPERSEDES: MARCH 2001

NA: NOT APPLICABLE
NDA: NO DATA AVAILABLE
< = LESS THAN
> = MORE THAN

WE BELIEVE THE STATEMENTS, TECHNICAL INFORMATION AND RECOMMENDATIONS

CONTAINED HEREIN ARE RELIABLE. HOWEVER, THE DATA IS PROVIDED WITHOUT WARRANTY, EXPRESSED CR IMPLIED. IT IS THE USER'S RESPONSIBILITY BOTH TO DETERMINE SAFE CONDITICNS FCR USE OF THIS PRODUCT AND ASSUME DOSS, DAMAGE CR EXPENSE, DIRECT OR CONSEQUENTIAL, ARISING FROM ITS USE. BEFORE USING PRODUCT, READ LABEL.

MSDS-B

Item: 6XT34 - BATTERY AAA 1.5V PK18

PICK REQ: 1114387763 **MATERIAL SAFETY DATA SHEET (MSDS)** **MSDS: A4917**

This MSDS should be attached or kept with the respective product with which it is associated.

MATERIAL SAFETY DATA SHEET - A4917

Associated Grainger Item: 6XT34 - BATTERY AAA 1.5V PK18

4WT07, 4WT08, 4WT09, 4WT11, 5U076, 4LW07, 41W13, 4LV99, 5U813, 3WA30, 3WA31 3WA32, 3WA33, 3WA34

RAYOVAC(R*)

MATERIAL SAFETY DATA SHEET

RAYOVAC CORPORATION
601 RAYOVAC DRIVE
MADISON, WI 53711

PH: 608-275-3340

FAX: 608-275-4992

1. WE WOULD LIKE TO INFORM OUR CUSTOMERS THAT THESE BATTERIES ARE EXEMPT ARTICLES AND ARE NOT SUBJECT TO THE 29 CFR 1910.1200 OSHA REQUIREMENT, OR TO THE CANADIAN WHMIS REQUIREMENTS AND THE SHEETS ARE SUPPLIED AS A SERVICE TO YOU. FOR OTHER MSDSS AND RELATED INFORMATION, VISIT: HTTP://WWW.RAYOVAC.COM.

2. THESE BATTERIES ARE SUITABLE FOR ORDINARY LANDFILL DISPOSAL (SEE SECTION 7 FOR RECYCLING).

4LW07 4LW13 5U813 2V533 2V422 4WT09 2V421 4WT08 2V534 4WT07 2V532 4WT11 5U076 4LV99 6XT34

1WC71 1WC72 1WC73 1WG72 - THESE SKU ARE ON CROSS-REFERENCE AND WEBSITE. ALL OTHERS MUST BE ADDED

1. IDENTIFICATION

PRODUCT NAME: ALKALINE BATTERIES - "NO MERCURY" FORMULA

SIZES: ALL

EMERGENCY TELEPHONE NUMBER:
608-275-4859 OR
800-424-9300 (24 HR. CHEMTREC)

EDITION DATE: 03/01/2002

APPROVED BY: TIMOTHY J. ANDERSON

2. INGREDIENTS

INGREDIENT NAME	CAS #	%	*TLV & SOURCE (UNITS)
MANGANESE DIOXIDE	1313-13-9	32 - 38	0.2 M3/M3
STEEL	7439-89-6	19 - 23	
ZINC	7440-66-6	11 - 16	10 M3/M3 (ZnO)
POTASSIUM HYDROXIDE	1310-58-3	5 - 9	C 2 M3/M3 (STEL)
GRAPHITE	7782-42-5	3 - 5	2 M3/M3
BARIUM SULFATE	7727-43-7	<5	10 M3/M3
WATER, PAPER, PLASTIC, OTHER		BALANCE	

*ACGIH THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES AND PHYSICAL AGENTS, 2001.

3. PHYSICAL DATA

BOILING POINT @ 760 MMHg (DEG. C): NA

VAPOR PRESSURE (MMHg @ 25 DEG. C): NA

VAPOR DENSITY (AIR = 1): NA

DENSITY (GRAMS/CC): NA

PERCENT VOLATILE BY VOLUME (%): NA

EVAPORATION RATE (BUTYL ACETATE = 1): NA

PHYSICAL STATE: NA

SOLUBILITY IN WATER (% BY WEIGHT): NA

pH: NA

APPEARANCE AND ODOR: GEOMETRIC SOLID OBJECT

4. FIRE & EXPLOSION HAZARD DATA

FLASH POINT: NA

FLAMMABLE LIMITS IN AIR (%): NA
LOWER (LEL): NA
UPPER (UEL): NA

EXTINGUISHING MEDIA: USE WATER, FOAM OR DRY POWDER, AS APPROPRIATE.

AUTO-IGNITION: NA

SPECIAL FIRE FIGHTING PROCEDURES:
AS WITH ANY FIRE, WEAR SELF-CONTAINED BREATHING APPARATUS TO AVOID INHALATION OF HAZARDOUS DECOMPOSITION PRODUCTS (SEE SECTION 2).

SPECIAL FIRE EXPLOSION HAZARDS:
LIKE ANY SEALED CONTAINER, BATTERY CELLS MAY RUPTURE WHEN EXPOSED TO EXCESSIVE HEAT; THIS COULD RESULT IN THE RELEASE OF FLAMMABLE OR CORROSIVE MATERIALS.

5. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE (TLV) AND SOURCE: NA

EFFECTS OF OVEREXPOSURE:
NONE. (IN FIRE OR RUPTURE SITUATION SEE SECTION 2 AND SECTION 4)

EMERGENCY FIRST AID PROCEDURES:

SKIN AND EYES:
IN THE EVENT THAT BATTERY RUPTURES, FLUSH WITH COPIOUS QUANTITIES OF FLOWING LUKEWARM WATER FOR A MINIMUM OF 15 MINUTES. GET IMMEDIATE MEDICAL ATTENTION FOR EYES. WASH SKIN WITH SOAP AND WATER.

SWALLOWING:
INGESTION OF A BATTERY CAN BE HARMFUL. CALL THE NATIONAL BATTERY INGESTION HOTLINE (202-625-3333) - COLLECT, DAY OR NIGHT - FOR ADVICE AND FOLLOW-UP.

6. REACTIVITY DATA

STABLE OR UNSTABLE: STABLE

INCOMPATIBILITY (MATERIALS TO AVOID): NA

HAZARDOUS DECOMPOSITION PRODUCTS: NA

DECOMPOSITION TEMPERATURE (0 DEG. F): NA

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS TO AVOID: AVOID ELECTRICAL SHORTING.

7. SPILL OR LEAK PROCEDURES

PROCEDURES TO CONTAIN AND CLEAN UP LEAKS OR SPILLS:
IN THE EVENT OF A BATTERY RUPTURE, PREVENT SKIN CONTACT AND COLLECT ALL RELEASED MATERIAL IN A PLASTIC LINED METAL CONTAINER.

REPORTING PROCEDURE:
REPORT ALL SPILLS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REPORTING REQUIREMENTS.

WASTE DISPOSAL METHOD:
WHEN SHREDDED PER TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP) PARAMETERS AND TESTED PER SW 846, 3RD EDITION, TEST METHODS FOR EVALUATING SOLID WASTE, INDEPENDENT CERTIFIED LABORATORY ANALYSES HAVE INDICATED THESE RAYOVAC BATTERY TYPES TO HAVE NO HAZARDOUS WASTE CHARACTERISTICS (PER 40 CFR, PART 261.24) AND CAN BE LANDFILLED IF ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS ARE COMPLIED WITH. TCLP DATA IS AVAILABLE UPON REQUEST; CALL 608-275-4859. FOR ADDITIONAL INFORMATION ON DISPOSAL OR RECYCLING OPTIONS, VISIT OUR WEBSITE AT HTTP://WWW.RAYOVAC.COM.

8. PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE): NA

VENTILATION:
LOCAL EXHAUST: NA
MECHANICAL (GENERAL): NA
SPECIAL: NA
OTHER: NA

PROTECTIVE GLOVES: NA

EYE PROTECTION: NA

OTHER PROTECTIVE CLOTHING: NA

9. SPECIAL PRECAUTIONS

HANDLING AND STORAGE:
STORE IN A DRY PLACE. STORING UNPACKAGED CELLS TOGETHER COULD RESULT IN CELL SHORTING AND HEAT BUILD-UP.

TRANSPORTATION-SHIPPING:
THESE ARE "BATTERIES, DRY" AND ARE NOT CONSIDERED TO BE A "HAZARDOUS MATERIAL" PER U.S. DOT (DEPT. OF TRANSPORTATION) REGULATIONS OR "DANGEROUS GOODS" PER IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION) REGULATIONS.

10. SARA 313

NOTIFICATION IS NOT REQUIRED BECAUSE THESE PRODUCTS ARE ARTICLE(S) THAT DO NOT RELEASE A COVERED TOXIC CHEMICAL UNDER THE NORMAL CONDITIONS OF PROCESSING OR USE.

NOTICE:
THE INFORMATION AND RECOMMENDATIONS SET FORTH ARE MADE IN GOOD FAITH AND ARE BELIEVED TO BE ACCURATE AT THE DATE OF PREPARATION. RAYOVAC CORPORATION MAKES
NO WARRANTY EXPRESSED OR IMPLIED.

NA = NOT APPLICABLE

ALKALINE BATTERIES -03-01-2002.DOC

ORDER: 1114387763 **ITEM: 5A283 - LUBRICANT WD 40 1 G** **HAZMAT: 5A283**

HAZARD MATERIAL WARNING SHEET (HAZMAT)

When shipment is complete, retain for daily Hazmat audit

****

GRAINGER SHIPPING INFORMATION

STOCK #	: 5A283
MSDS #	: A6186
FREIGHT CODE	: 0225
DOT PROPER SHIP NAME	: COMBUSTIBLE LIQUID, (PETROLEUM DISTILLATE MIXTURE), NOT REGULATED BY DOT AS A HAZARDOUS MATERIAL PER 49CFR 173.150(F)(2), FLASHPOINT 55 DGS C, 131 DGS F
UPS RESTRICTIONS	:
HAZARDOUS CLASS NUMBER	:
UN ID #	:
PACKING GROUP	:
SHIPPING LABEL	:
	:
LIMITED QUANTITY	: N
CARTON INSTRUCTIONS	: CAN REPACK IN GRAINGER S CARTON
EXCEPTION	:
DOT/UPS EXEMPTION NO.	:
COMMENTS 1	: HAZARDOUS MATERIAL. DO NOT SHIP AIR!!
COMMENTS 2	: ONLY ARROW UP LABEL (2S594) REQUIRED.
SHIPPING-PAPERS	: AUTOMATED BILL OF LADING REQUIRED ON TRUCK SHIPMENTS.

PLACARD OFFERED ? YES ( ) NO ( ) PLEASE MARK ONE

¬G TO ACCOMPANY SHIPMENT

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Material Safety Data Sheet

Vacuum Gas Oils (VGO)

MSDS: 007705 **Revision #:**1 **Revision Date:**08/06/99

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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Vacuum Gas Oils (VGO)

PRODUCT NUMBER(S): CPS276806

COMPANY IDENTIFICATION

Chevron Products Company
575 Market St.
San Francisco, CA 94105-2856

EMERGENCY TELEPHONE NUMBERS

HEALTH (24 hr): (800)231-0623 or
(510)231-0623 (International)
TRANSPORTATION (24 hr): CHEMTREC
(800)424-9300 or (703)527-3887
Emergency Information Centers
are located in U.S.A.
Int'l collect calls accepted

PRODUCT INFORMATION: MSDS Requests and Product Information
(800) 689-3998

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2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0 % Vacuum Gas Oils (VGO)

CONTAINING

COMPONENTS	AMOUNT	LIMIT/QTY	AGENCY/TYPE
DISTILLATES, VACUUM Chemical Name: DISTILLATES, VACUUM CAS70592788		NONE	NA
DISTILLATES, LIGHT VACUUM Chemical Name: DISTILLATES, LIGHT VACUUM CAS70592777		NONE	NA

COMPOSITION COMMENT:
All the components of this material are on the Toxic Substances Control Act Chemical Substances Inventory.

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3. HAZARDS IDENTIFICATION

********** EMERGENCY OVERVIEW **********

Amber to black viscous liquid with mild pungent to sulfurous odor.

- COMBUSTIBLE LIQUID AND VAPOR
- MAY RELEASE HIGHLY TOXIC AND FLAMMABLE HYDROGEN SULFIDE (H2S) GAS
- DO NOT ATTEMPT RESCUE WITHOUT SUPPLIED-AIR RESPIRATORY PROTECTION
- VAPOR HARMFUL
- MAY CAUSE SKIN IRRITATION
- CANCER HAZARD
- PROLONGED OR REPEATED SKIN CONTACT MAY INCREASE THE RISK OF SKIN CANCER

****

IMMEDIATE HEALTH EFFECTS
EYE:
Not expected to cause prolonged or significant eye irritation.
SKIN:
Contact with the skin may cause irritation. Not expected to be harmful to internal organs if absorbed through the skin.
INGESTION:
Not expected to be harmful if swallowed.
INHALATION:
Excessive or prolonged breathing of this material may cause central nervous system effects. This material contains sulfur compounds which may form hydrogen sulfide. Hydrogen sulfide has a strong rotten-egg odor. However, with continued exposure and high levels, H2S may deaden a person's sense of smell. If rotten-egg odor is no longer noticeable, it may not necessarily mean that exposure has stopped. At low levels, hydrogen sulfide causes irritation to the eyes, nose, and throat. Moderate levels can cause headaches, dizziness, nausea, vomiting, as well as coughing and difficulty in breathing. Higher levels can cause shock, convulsions, coma, and death. After serious exposure, symptoms usually begin immediately.
SIGNS AND SYMPTOMS OF EXPOSURE:
Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death. Skin irritation: may include pain, reddening, swelling, and blistering.
CARCINOGENICITY:
Prolonged or repeated breathing of and/or skin contact with this material may cause cancer. Risk of cancer depends on duration and level of exposure. See Section 11 for additional information.

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4. FIRST AID MEASURES

EYE:
No specific first aid measures are required because this material is not expected to cause eye irritation. As a precaution remove contact lenses, if worn, and flush eyes with water.

SKIN:
Wash skin immediately with soap and water and remove contaminated clothing and shoes. Get medical attention if irritation persists. Discard contaminated clothing and shoes or thoroughly clean before reuse.
INGESTION:
No specific first aid measures are required because this material is not expected to be harmful if swallowed. Do not induce vomiting. As a precaution, give the person a glass of water or milk to drink and get medical advice. Never give anything by mouth to an unconscious person.
INHALATION:
If exposure to hydrogen sulfide (H2S) gas is possible during emergencies, wear a NIOSH/MSHA approved positive pressure air-supplying respirator. Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get immediate medical attention.
NOTE TO PHYSICIANS:
Administration of 100% oxygen and supportive care is the preferred treatment for poisoning by hydrogen sulfide gas. For additional information on H2S, see Chevron MSDS No. 301.

5. FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Combustible liquid.
FLAMMABLE PROPERTIES:
FLASH POINT: >141F Pensky-Martens(>141-250F)
AUTOIGNITION: NDA
FLAMMABILITY LIMITS (% by volume in air): Lower: NDA Upper: NDA
EXTINGUISHING MEDIA:
CO2, Dry Chemical, Foam, Water Fog. Do not use water spray or a direct stream of warer.
NFPA RATINGS: Health 0; Flammability 2; Reactivity 0.
FIRE FIGHTING INSTRUCTIONS:
For fires involving this material, do not enter any enclosed or confined fire space withour proper protective equipment, including self-contained breathing apparatus.

See section 7 for proper handling and storage.
COMBUSTION PRODUCTS:
Normal combustion forms carbon dioxide, water vapor and may produce oxides of sulfur and nitrogen. Incomplete combustion can produce carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

CHEMTREC EMERGENCY NUMBER (24 hr): (800)424-9300 or (703)527-3887
International Collect Calls Accepted
ACCIDENTAL RELEASE MEASURES:
Eliminate all sources of ignition in the vicinity of the spill or released vapor.

Stop the source of the leak or release. Clean up releases as soon as possible, observing precautions in Exposure Controls/Personal Protection. Contain liquid to prevent further contamination of soil, surface water or groundwater. Clean up small spills using appropriate techniques such as sorbent materials or pumping. Where feasible and appropriate, remove

contaminated soil. Follow prescribed procedures for reporting and responding to larger releases. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Contact local environmental or health authorities for approved disposal of this material.

If this material is released into a work area, evacuate the area immediately. Persons entering the contaminated area to correct the problem or to determine whether it is safe to resume normal activities must comply with all instructions in the Exposure Controls/Personal Protection section.

Release of this product should be prevented from contaminating soil and water and from entering drainage and sewer systems. U.S.A. regulations require reporting spills of this material that could reach any surface waters. The toll free number for the U.S. Coast Guard National Response Center is (800) 424-8802.

7. HANDLING AND STORAGE

Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85F.

Do not get in eyes, on skin, or on clothing. Do not taste or swallow. Do not breathe vapor or fumes. Wash thoroughly after handling.

Toxic quantities of hydrogen sulfide (H2S) may be present in storage tanks and bulk transport vessels which contain or have contained this material. Persons opening or entering these compartments should first determine if H2S is present. See Exposure Controls/Personal Protection -Section 8. Do not attempt rescue of a person overexposed to H2S without wearing approved supplied-air or self-contained breathing equipment.

Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating an accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, "Flammable and Combustible Liquids", National Fire Protection Association (NFPA) 77, "Recommended Practice on Static Electricity", and/or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents".

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal

protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS
Use process enclosures, local exhaust ventilation, or other engineering controls to control H2S levels below the OSHA Permissible Exposure Limit (PEL) of 10 ppm. For more information on H2S, see Chevron MSDS No. 301.

PERSONAL PROTECTIVE EQUIPMENT
EYE/FACE PROTECTION:
No eye protection is normally required.
SKIN PROTECTION:
Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: <Nitrile> <Viton> <Polyurethane> <Chlorinated Polyethylene (or Chlorosulfonated Polyethylene or CPE)>
RESPIRATORY PROTECTION:
Determine if airborne concentrations are below recommended exposure limits for H2S. If not, wear a NIOSH approved air-supplying respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION:
Amber to black viscous liquid with mild pungent to sulfurous odor.

pH:	NA
VAPOR PRESSURE:	NDA
VAPOR DENSITY (AIR=1):	NDA
BOILING POINT:	>300F (>148C)
FREEZING POINT:	NDA
MELTING POINT:	NDA
SOLUBILITY:	Soluble in hydrocarbon solvents; insoluble in water.
SPECIFIC GRAVITY:	0.8 - 0.9
EVAPORATION RATE:	NDA
VISCOSITY:	>20 cSt @ 40C

10. STABILITY AND REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS:
NDA
CHEMICAL STABILITY:
Stable.
CONDITIONS TO AVOID:
No data available.
INCOMPATIBILITY WITH OTHER MATERIALS:
May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
HAZARDOUS POLYMERIZATION:
Polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
The eye irritation hazard is based on an evaluation of the data for the components.
SKIN EFFECTS:
The skin irritation hazard is based on an evaluation of the data for the components. The acute dermal toxicity is based on an evaluation of the data for the components.
ACUTE ORAL EFFECTS:
The acute oral toxicity is based on an evaluation of the data for the components.
ACUTE INHALATION EFFECTS:
The acute respiratory toxicity is based on an evaluation of the data for the components.
CHRONIC EFFECTS/CARCINOGENICITY:
This product may contain significant amounts of polynuclear aromatic hydrocarbons (PAH's) which have been shown to cause skin cancer after prolonged and frequent contact with the skin of test animals. Brief or intermittent skin contact with this product is not expected to have serious effects if it is washed from the skin. While skin cancer is unlikely to occur in human beings following use of this product, skin contact and breathing of mists or vapors should be reduced to a minimum.

12. ECOLOGICAL INFORMATION

ECOTOXICITY:
No data available.
ENVIRONMENTAL FATE:
No data available.

13. DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible.

This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by USEPA under RCRA (40CFR261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

14. TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT SHIPPING NAME: PETROLEUM DISTILLATES, N.O.S.
DOT HAZARD CLASS: COMBUSTIBLE LIQUID

DOT IDENTIFICATION NUMBER: UN1268
DOT PACKING GROUP: III
ADDITIONAL INFO: DESCRIPTION ONLY APPLIES TO BULK SHIPMENTS IN THE UNITED STATES. NOT REGULATED OUTSIDE THE UNITED STATES.

15. REGULATORY INFORMATION

SARA 311 CATEGORIES:

1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: YES
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01=SARA 313	11=NJ RTK	22=TSCA Sect 5(a)(2)
02=MASS RTK	12=CERCLA 302.4	23=TSCA Sect 6
03=NTP Carcinogen	13=MN RTK	24=TSCA Sect 12(b)
04=CA Prop 65-Carcin	14=ACGIH TWA	25=TSCA Sect 8(a)
05=CA Prop 65-Repro Tox	15=ACGIH STEL	26=TSCA Sect 8(d)
06=IARC Group 1	16=ACGIH Calc TLV	27=TSCA Sect 4(a)
07=IARC Group 2A	17=OSHA PEL	28=Canadian WHMIS
08=IARC Group 2B	i8=DOT Marine Pollutant	29=OSHA CEILING
09=SARA 302/304	19=Chevron TWA	30=Chevron STEL
10=PA RTK	20=EPA Carcinogen	

The following components of this material are found on the regulatory lists indicated.

DISTILLATES, LIGHT VACUUM
is found on lists: 06,

WHMIS CLASSIFICATION:
Class D, Division 1, Subdivision A: Very Toxic Material
-Carcinogenicity
- Acute Lethality.
Class D, Division 2, Subdivision B: Toxic Material
-Skin or Eye Irritation
Class B, Division 3: Combustible Liquids

16. OTHER INFORMATION

NFPA RATINGS: Health 0; Flammability 2; Reactivity 0;
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT:
Changes have been made to Section 1 (Name Change and Product Identification).

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:
TLV - Threshold Limit Value TWA - Time Weighted Average

STEL - Short-term Exposure Limit	TPQ - Threshold Planning Quantity
RQ - Reportable Quantity	PEL - Permissible Exposure Limit
C - Ceiling Limit	CAS - Chemical Abstract Service Number
A1-5 - Appendix A Categories	() - Change Has Been Proposed
NDA - No Data Available	NA - Not Applicable

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1) by the Toxicology and Health Risk Assessment Unit, CRTC, P.O. Box 1627, Richmond, CA 94804

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The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modification of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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THIS IS THE LAST PAGE OF THIS MSDS

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